JPRS-CAG-86-033

6 OCTOBER 1986

China Report

AGRICULTURE

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MINISTER ON PROBLEMS OF FOREST ENTERPRISES

OW041251 Beijing XINHUA Domestic Service in Chinese 1353 GMT 2 Sep 86

[By reporter An Yichao]

[Text] Changchun, 2 Sep (XINHUA)--Yang Zhong, minister of forestry said: Forest enterprises have experienced serious crisis in forest resources as well as economic difficulties. Decisive measures should be taken to change this situation as soon as possible. The fundamental way out for the forest industry lies in reforms.

Yang Zhong said this at the national discussion meeting on economic restructuring of the forest industry in state-owned forest zones which closed on 1 September.

He said: The resource and economic crises of China's forest enterprises have persisted for years. Since the 3d Plenary Session of the 11th Party Central Committee, forest enterprises have undergone readjustments and reforms, thereby solving some problems. However, the numerous problems that have accumulated over the years have yet to be completely solved. The current economic difficulties experienced by the forest enterprises are quite outstanding compared with other industries in China. Last year per-capita retained profit was about one-third that recorded by the metallurgical, machinery, petroleum, textile, and light industries in 63 major cities in China.

How to carry out economic restructuring of forest enterprises? Yang Zhong said: Most forest enterprises are located in high mountains, valleys, upper reaches of large rivers, and border areas inhabited by minorities. They are production units as well as major organizations for ecological protection. These units should receive full support, and efforts should be made to eliminate the shortcomings and exploit the advantages to give them vigor and vitality, and keep the beneficial cycle going. Therefore, the guiding thought and goals of forest enterprises should be to swiftly check the rate of deterioration, increase forest resources, and fully develop the economic, ecological, and social benefit of state-owned forest zones.

Yang Zhong stressed: Forest enterprises can acquire a period of recuperation and growth and start off a beneficial cycle through reforms, which should be linked up with and carried out simultaneously with the overall state economic reform. Meanwhile, it is also necessary to maintain good relationship with the localities and the masses. Most state-owned forest zones in China life in impoverished mountainous areas and in areas where many minorities live together, and where forestry, agriculture, animal husbandry, and mining industry overlap one another. Many prefectures and counties rely on timber as their major source of financial revenues. Therefore, we should integrate the development of forest zones with the promotion of local economic prosperity and the masses' well-being. In dealing with the existing contradictions and problems, we should follow the principle of "dividing profits, not forests."

The discussion meeting was held by the Forestry Ministry at the Sanchazi Forest Bureau in Jilin Province. Participating comrades followed the general requirements of the state economic structural reform, took the present situation of forest enterprises into consideration, studied and discussed problems to be solved in the near future, and presented an initial program on the overall economic restructuring of the forest industry. Chen Junsheng, secretary general of the State Council, spoke at the discussion meeting.

/8918
CSO: 4007/520

ACHIEVEMENTS REPORTED IN HARNESSING YELLOW RIVER

OW070822 Beijing XINHUA in English 0702 GMT 7 Sep 86

[Text] Zhengzhou, September 7 (XINHUA)--The Yellow River, which used to be known as "China's Sorrow" has neither breached its dike nor changed its course since massive harnessing work began in 1946.

Gong Shiyang, chairman of the Zhengzhou based Yellow River water conservation committee which is in charge of taming the river, described the success of the proejct as a miracle.

He attributed this to flood-control facilities built at a cost of five billion yuan (about U.S. $1.35 billion). The money came from the central and local governments.

The 5,464-km Yellow River--China's second longest after the Yangtze--flows west to east through 9 provinces and autonomous regions.

The long and winding river carries downstream 1.6 billion tons of silt a year from the western arid highlands, causing serious soil erosion and raising the river bed above the surrounding ground on the lower reaches.

According to historical records, the river flooded more than 1,500 times before new China was founded in 1949.

"Over the past 40 years," Gong said, "professional water conservancy workers and millions of peasants have launched annual mobilizations to reinforce the 1,400-km dike along the river's lower reaches. Three times the dike has been raised by two to six meters."

Also, 5,000 flood control dams have been erected in that section and the water channel in these areas has been dredged to facilitate and flow of water into the sea.

Since the 60's, the Chinese people have completed work on the Sanmenxia gorge reservoir in Henan Province, which is able to control flooding on 92 percent of the river's 752,400 sq km basin.

Other new major flood-control facilities include two flood retarding basins in Henan and Shandong provinces on the lower reaches of the Yellow River. These new basins are capable of storing five billion cubic meters of water.

The construction of these facilities involved filling in 713 million cubic meters of earth and stone, enough to build 13 great walls, according to Gong.

"This has enabled the lower reaches to escape flooding even when the river reaches a flow rate of 22,000 cubic meters per second," Gong noted.

For example a flood with a flow measuring at 22,300 cubic meters per second passed safely in 1958 whereas a flood in 1933 with a flow of 20,400 cubic meters per second breached the dike in 54 places inundating 11,000 sq km of land and claiming 18,000 lives.

Gong said, "now, we've brought 100,000 sq km of land on the middle and upper reaches, or 20 percent of the total area suffering from soil erosion, under control by building terraced fields and reservoirs, and planting trees and grass."

This alone has reduced the amount of silt washed away into the river by 200 million tons a year.

"In the course of taming the river, the Chinese people are also trying to reap benefits from the projects," he said.

For example, Yellow River water is now being used to irrigate 4.67 million hectares of farmland in the river basin, more than five times the acreage in 1949.

In all, 27 billion cubic meters of water, 48 percent of the river's annual flow, is being diverted for drinking, irrigation and industrial production.

Since 1949 hydroelectric power stations with a total generating capacity of 2.54 million kw have been built on the upper reaches. These projects "also serve the purposes of irrigation and flood control," Gong said.

He also disclosed that celebrations will be held in October, after the summer and autumn flood peak passes, to mark the 40th anniversary of harnessing the Yellow River.

/8918
CSO: 4020/431

NATIONAL

OUTPUT VALUE OF 1984, 1985 WATER CONSERVANCY INDUSTRY COMPARED

Beijing ZHONGGUO SHUILI [CHINA WATER CONSERVANCY] in Chinese No 7, 15 July 86 p 30

[Text]

Area	1985 Gross Output Value (10,000 yuan)	Net Output Value (10,000 yuan)			Average Net Output Value of All Personnel (10K yuan/person)			Average Number of Staff and Workers			1985 Net Output Value and Gross Output Value, Percent
		1985	1984	+,-(%)	1985	1984	+,-(%)	1985	1984	+,-(%)	
Total	67253.1	24840.2	21382.8	16.2	2489	2065	20.4	99782	103538	-3.6	37
Beijing	4684	2383.1	1811.8	31.5	7373	5085	45.0	3232	3563	-9.3	51
Tianjin	1234	414.4	472.2	-12.2	4524	5258	-14.0	966	898	7.6	34
Hebei	3440	1112	1028.6	8.1	2169	1606	35.1	5127	6404	-19.9	32
Shanxi	1683	638.7	740	-13.7	1613	2025	-20.3	3960	3655	8.3	38
Nei Monggol	1512	608	495.4	22.7	1900	1635	16.2	3200	3030	5.6	40
Liaoning	2026	571	754	-24.3	1255	1438	-12.7	4551	5242	-13.2	28
Jilin	1290.4	840.7	699	-24.3	3580	3078	16.3	4551	2271	3.4	65
Heilongjiang	5185.2	1733.4	1462	18.6	2856	2483	15.0	6069	5887	3.1	33
Shanghai	473	171	202	-15.3	3190	3285	-2.9	536	615	-12.8	36
Jiangsu	1990.5	671.4	566	18.6	2209	1974	11.9	3040	2867	6.0	34
Zhejiang	4274.7	1528.3	1093.2	39.8	2655	1708	55.4	5756	6401	-10.1	36
Anhui	4417.7	1620.8	1419	14.2	2316	2077	11.5	6997	6831	2.4	37
Fujian	1930.8	838.2	776	8.0	3015	2736	10.2	2780	2836	-2.0	43
Jiangxi	584	270.3	257	5.2	1635	1473	11.0	1653	1745	-5.3	46
Shandong	1892	680.7	365.5	86.2	2894	1814	59.5	2352	2015	16.7	36
Henan	3394	1063.8	841.4	26.4	2425	1993	21.7	4387	4221	3.9	31
Hubei	2135	623.4	626.8	-0.5	1896	1996	-5.0	3288	3140	4.7	29
Hunan	2158.6	692.3	654.5	5.8	1969	1594	23.5	3516	4106	-14.4	32
Guangdong	6167.6	2101.2	1997.9	5.2	2970	2364	25.6	7074	8453	-16.3	34
Guangxi	644.6	241.1	320.9	-24.9	1519	1985	-23.5	1587	1617	-1.9	37
Sichuan	2715.1	869	998.9	-13	1731	1688	2.5	5021	5918	-15.2	32
Chongqing	135.5	61	53	15.1	2068	2046	1.1	295	259	13.9	45
Guizhou	781.9	302.3	272.5	10.9	2542	2730	-6.9	1189	998	19.1	39
Yunnan	817	314.3	297.5	5.6	2369	2047	15.7	1327	1453	-8.7	39
Xizang	--	--	--	--	--	--	--	--	--	--	--
Shaanxi	3158.1	1372	958.7	43.1	2477	2123	16.7	5539	4515	22.7	43
Gansu	2443.2	819.6	555.9	47.4	1513	1022	48.0	5416	5439	-0.4	36
Qinghai	1184.7	322.4	394.1	-18.2	1417	1641	-13.7	2275	2402	-5.3	27
Ningxia	1645	695	367	89.4	2676	1725	55.1	2597	2128	22.0	42
Xinjiang	3255.5	1280.8	1108	15.6	3458	2394	44.4	3704	4629	-20.0	39

/9365
CSO: 4007/507

BRIEFS

FUNDS FOR HARNESSING HUAIHE--Hefei, September 4 (XINHUA)--China will invest 1.24 billion yuan (about U.S. $335 million) during the 1986-90 period to bring the Huaihe river under complete control. The investment is five times that of the previous five-year period, according to Cai Jingxun, director of the Committee For Harnessing the Huaihe River, attached to the Ministry of Water Resources and Electric Power. The 1,000-kilometer Huaihe, one of China's seven biggest rivers, has a basin covering 270,000 sq kilometers inhabited by 130 million people in central China's Henan Province and east China's Shandong, Anhui and Jiangsu provinces. Major projects to be undertaken during the 1986-90 period include consolidation of three big reservoirs and reconstruction of two reservoirs which were breached in 1975 on the upper reaches of the river. On the middle reaches, efforts will be made to complete the consolidation of two sections of dykes totalling 430 kilometers, Cai said. A new canal will be dug to divert the river into the Yellow Sea and a new dyke will be built along the canal which links the Huaihe to Hongze lake. Work will also be completed on the realignment of two other canals and five tributaries during the next five years, he said. [Text] [Beijing XINHUA in English 1000 GMT 4 Sep 86 OW] /8918

SEMI-DESERT TRANSFORMATION TECHNIQUE--Yinchuan, August 29 (XINHUA)--Chinese scientists have developed a technique combining tree and grass planting with animal farming to transform semi-deserts, XINHUA learned today. The technique, tried out over the past seven years in an experimental centre on the east slope of the Helan mountains in Ningxia Hui Autonomous Region, has been approved by a state appraisal board. Ren Jizhou, professor of Gansu Agricultural University and an expert on grassland, said the development is important for the battle against desertification, especially in parts of Ningxia, Inner Mongolia Autonomous Region, and Gansu and Shanxi provinces. Scientists pumped underground water to irrigate trees and shielded grasslands with shelterbelts. Animal husbandry and diversified economy were boosted later. Over the years, they have harvested from the 667-hectare experimental center 15 tons of feed, 2,000 tons of forage grass and 500 tons of vegetables and fruit, and raised 700 sheep. [Text] [Beijing XINHUA in English 1021 GMT 29 Aug 86 OW] /8918

SUMMER GRAIN, EDIBLE OIL OUTPUT--Beijing, 4 Sep (ZHONGGUO XINWEN SHE)--According to the latest statistics revealed by the Ministry of Agriculture, Animal Husbandry, and Fishery, China's summer grain and oils output for this year hit record a high level. According to the statistics, this year's gross grain output totalled 93 million tons, an increase of 4.25 million tons over last year. This is 1.7 millions tons more than the planned quota, or 1 million tons more than the great bumper harvest figure of 1934. This year's output of rapeseed increased by 202,500 tons over last year, or 17,000 tons more than the planned quota. [Text] [Hong Kong ZHONGGUO XINWEN SHE in Chinese 0623 GMT 4 Sep 86 HK] /8918

CSO: 4007/520

TRANSPROVINCIAL AFFAIRS

BRIEFS

YUNNAN, SICHUAN PORK AGREEMENT--Recently, the Yunnan Provincial Food Corporation and the Sichuan Provincial Food Corporation signed a long-term agreement to transfer frozen pork and live pigs. The agreement stipulates that from 1986 to 1988, Sichuan will transfer 25,000 tons of pork (including live pigs) to Yunnan each year. The transfer price of frozen pork will be set on the basis of the guiding price stipulated by the Food Bureau of the Finance Department or the Sichuan Provincial Food Corporation. The price of pigs will be based on the concrete conditions of time and place agreed upon by both parties. [Excerpt] [Kunming YUNNAN RIBAO in Chinese 4 Aug 86 p 1]

CSO: 4007/512

GROWING INTEGRATION OF SHANGHAI MUNICIPALITY, SUBURBS

Beijing LIAOWANG [OUTLOOK WEEKLY] in Chinese No 16, 21 Apr 86 pp 20-21

[Article by Sun Hongxiang [1327 3163 4382]: "The Urbanization Trend In The Shanghai Suburban District]

[Text] The undertaking of first- and second-stage reforms by China's farm villages has enabled Shanghai Municipality's suburban district farm villages to leap the natural economic hurdles formed over the past 1,000 years or more, and start moving ahead toward the integration of city and countryside. Though still but a fresh sprout just breaking through the surface, it nevertheless reveals an inspiring vision of exuberant vitality.

The Embryonic Forms of Modernizing Agriculture

This new trend shows first that agriculture has started down the path to becoming specialized, commercialized, and modernized. According to relevant nationally regulated standard statistics, there are currently 4,444 specialized crop-cultivating or small-animal-raising households in Shanghai Municipality's suburban district farm villages. The scale of operation of these specialized households is extensive. For instance, 30.5 mu of grain land is contracted per grain specializing household, more than sixfold that of the average peasant household. Annually invested production costs over 5,600 yuan, more than nine times the cost for the average peasant household. The benefits reaped are greater with a comparatively large scale of operation. First of all, commodity rates are high. Productivity in their grain production per worker is ninefold that of the average peasant household's worker. The grain can provide for the annual consumption of 30 to 40 people. Second, economic benefits are high. Net income from labor can reach more than 1,700 yuan, 52 percent higher than income from average agricultural labor and higher than the mean income level of industrial labor. The formation of specialized households of all kinds has stimulated a specialized division of labor in farm villages. On this basis, many villages are gradually transforming into specialized villages of one kind or another. These villages are linking up the dispersed economies of individual families and households to form, through companies of one kind or another, a new-style cooperative joint entity.

Whether it be crop growing or the livestock industry, many production links are currently being completed by service companies of one kind or another in Shanghai Municipality's suburban district. Contracting households need only pay a fixed fee, and need not do anything themselves. It [illegible]stood in general that the suburban district's 208 township [illegible] up agricultural and sideline industry companies. More than 2,800 out of 3,003 villages have established agricultural and sideline industry service brigades (groups). They provide peasants with systematic and comprehensive service in production, technology, information processing, transportation, and circulation, and have tremendously reduced the peasant workloads. Jiading County and Xuxing Township and peasants contract nearly 50 mu of grain land and last year each person expended only 60 days of labor to work it. Income reached 2,000 yuan (not including that portion where industry was used to supplement agriculture). These peasants used spare time to study scientific knowledge in agriculture, studied production techniques, read newspapers and books, and studied advanced measures for expanding production.

The Extension of the City

Agricultural reform is promoting growth in Shanghai suburban district's township and town enterprises. Like brightly colored mountain flowers, in a few short years factories of all kinds have opened up in every township and village. Currently, there already are in excess of 7,000 township and town enterprises in the more than 6,000 square km total area of the Shanghai suburban district, an average of one factory in less than 1 square km. Having undergone reform and adjustment year after year, these township and town enterprises have formed industrial systems with 10 or so kinds of industries, including those in metallurgy, chemistry, machinery, light industry, foodstuffs, textiles, shoes, and paper, and in more than 130 trades.

Last year's gross production value of township and town enterprises for the suburban district reached 8.8 billion yuan, nearly 80 percent of the gross production value of farm village cooperative economies. If countries with over 51 percent of production value in industry can be said to be industrialized, then the Shanghai suburban district's farm villages rate as "industrialized rural villages."

Small town industrial growth has provoked a massive restructuring of farm village labor. In the last several years a grand total of 1.1 million peasants in the Shanghai suburban district have switched from agriculture over to the industrial production domain, 40.6 percent of the total labor power of agricultural villages. The trend of agricultural labor to shift over to secondary and tertiary industries will continue along with the improvement in agricultural conditions following "the using of industry to supplement agriculture" and the setting up of an expanded and socialized service system.

Sixty-five percent of these widely scattered township and town enterprises work as feeders for large industries, and 15 percent work in export trade. Their production plans, raw materials, and commodity sales are for the most part included in the state plan. For example, 90 percent of the parts for the nationally reknown Fenqhuanq and Yonqjiu bicycles are produced by township and town enterprises. The state bicycle factories, producing only a small quantity of parts, are responsible for assembly work.

Along with economic, cultural, and transportation growth in farm villages, this urban-rural integration and interpenetration has also steadily developed from being just a bit, to being widespread, and is headed toward being in-depth. Currently, the municipal district's various systems have established nearly 500 factories in the suburban district, with a total work force in excess of 500,000 and a gross annual production value of approximately 12 billion yuan. In addition, many universities, colleges, and research institutes have also been established in the suburban district. It can be predicted that this regional and economic mixing together of city and countryside will grow increasingly intimate. Many people nowadays look upon the suburban counties of Shanghai as an extension of the city.

City-Countryside Interdependence Is Growing

The unraveling of the natural economy and growth of commodity production in Shanghai suburban county farm villages has made the interdependence of city and countryside even more intimate. With a shortage of 5 million mu in cultivable land for the Shanghai suburban district's peasants, current annual grain production is half the grain consumption of the 12 million municipal population. The cotton produced is about one-third of the municipality's raw material for the textile industry. The suburban district still supplies a surplus of food oil for city residents. It also provides between 60 and 70 percent of municipal pork, poultry, egg and other nonstaple food sales, all the city's vegetables and fresh milk, and most of the freshwater fish. According to rough statistics from last year for Shanghai, a sum of more than 5 billion yuan in commodities were exchanged between the city and countryside. Of this, the value of agricultural sideline products sold from the city's suburban farm villages to its municipal district was approximately 2 billion yuan, and more than 3 billion yuan in industrial products were sold from the municipal district to the suburban counties. Along with the reform of the agricultural byproduct state monopoly purchase and marketing system and the adjustment of farm village production structure, this trend to use the pattern of commodity exchange to link up urban-countryside relations will become daily more obvious.

Relevant responsible persons revealed some rousing figures at a recently convened working conference on Shanghai Municipality farm villages. In the last 5 years, the net Shanghai Municipal increase in production value was 26.2 billion yuan, including a suburban district increase of 8.7 billion yuan which was one-third of the net increase. There was a 2 billion yuan increase in Shanghai Municipality's commodity exports, half of which came from suburban counties. The suburban district has at the same time become an important source for increasing state revenues. In 1980, revenues for the suburban district's 10 counties were only 5 percent of the municipality's local revenues. By last year it had risen to 11 percent. This clearly shows that farm village economies have already linked up with the city's economy to form a single whole. Shanghai's economic expansion and prosperity is increasingly inseparable from its suburban district.

An "Outward-Facing" Type of Economy

In seeking growth, the Shanghai suburban district not only overran its more than 6,000 square km domain, it has also broken through the municipal district's 160 square km domain. Up to the present, Shanghai suburban district counties have initiated lateral connections with more than 120 counties in 20 provinces, municipalities, and self-governing regions, and created more than 200 items of economic and technical cooperation. At the same time, the Shanghai suburban district has utilized its plenty in labor and capital and its superior foundation in township and town enterprises to energetically pioneer in the utilization of foreign capital work and in the expansion of enterprises generating foreign exchange. The counties have directly attracted more than $40 million in foreign and Hong Kong capital, and arranged for the establishment of 24 enterprises.

The Shrinking of The Urban-Countryside Gap

The gap in living standards between the city and countryside in Shanghai Municipality has now been greatly reduced. The standard of living for peasants in some nearby suburban locales has even surpassed that of municipal residents. Statistical department sample surveys show that the mean income of suburban district peasants reached 807 yuan last year. In recent years, the annual mean area of housing constructed is 1,900 square meters. The current mean living area per person is approximately 20 square meters, greatly exceeding the mean living area of municipal district residents.

From another angle, market town construction and development in Shanghai Municipality's suburban counties is showing people a new side to rural village industrialization and community urbanization. There are currently a total of 530 large and small market towns in the suburban district's 10 counties. There is a mean of one market town for approximately every 12 square km, a density which is first in the nation. When constructing market towns, many townships are keeping the integration of the city and countryside in mind, causing them to become miniature cities and progressive rural villages. Songjiang County's Xinbang Township undertook scientific planning according to the environment and divided market town construction into an administrative district, industrial district, green district, cultural center, and other different districts. Jiading County broke with the traditional "flat roof" and "match box" city and town style of house construction, and built distinctively styled buildings of the "Jade Pagota," "Butterfly," "Carpenter Square," "Colored Ribbon," and other styles, causing city residents to stare with new respect. According to statistics, two out of every five market towns in the suburban district have set up movie theaters, hospitals, cultural centers and middle schools. The total population count for those currently working and living in market towns is 2.5 million, 45 percent of the total suburban district population.

These special features of economic growth in the farm villages of Shanghai Municipality show people a new trend in the economic development of the suburban districts of cities. It inspires people when making plans, thinking about problems, and managing affairs to dare to break through the urban-countryside barrier, which makes possible the effective promotion of greater prosperity in city and countryside economies and more rapid process in the integration of the city and countryside.

13152/12859
CSO: 4007/417

FUJIAN

BRIEFS

SOYBEAN HARVEST--The spring soybean harvest of more than 560,000 mu has basically concluded, estimated gross output may increase by about 4,500,000 kilograms. This year the area sown to the spring crop increased more than 50,000 mu. The area sown to soybeans in Putian City was more than 110,000 mu, per unit yield was 97.5 kilograms, an increase of 16 kilograms; the area sown to soybeans in Quanzhou City was more than 150,000 mu, the per unit yield was 96.5 kilograms, an increase of 6 kilograms. [Excerpts] [Fuzhou FUJIAN RIBAO in Chinese 10 Aug 86 p 1]

CSO: 4007/518

GUIZHOU

BRIEFS

RAPESEED PROCUREMENT--As of July 10, Guizhou Province had procured 28,200 tons of rapeseeds, an increase of 11,400 tons over the same period last year. [Excerpt] [Beijing ZHONGGUO SHANGYE BAO in Chinese 31 Jul 86 p 1]

CSO: 4007/521

HUBEI RIBAO EDITORIAL ON GRAIN HARVESTING

HK260716 Wuhan Hubei Provincial Service in Mandarin 1000 GMT 23 Jul 86

[Report on 23 July HUBEI RIBAO editorial: "Race Against the Season, Guarantee Quality, Overfulfill the Quotas, and Strive for a New Bumper Grain Harvest--First Comment on Fighting Hard in July, August, and September and Striving for a Total Victory in Agricultural Production"]

[Excerpts] The editorial says: The second month of summer has set in and early rice has begun to mature. The battle of both crash-transplanting [as heard] early rice and crash-transplanting late rice in rural areas has started. This is a decisive battle which has a bearing on whether or not the target of agricultural development for the whole year can be realized. The whole province and all trades professions must make concerted efforts to resolutely win this battle and create conditions for wresting a bumper agricultural harvest of the whole of this year.

At present, the rural situation of our province is good but there were some problems. This year, we had drought first and floods later. This caused some losses to agricultural production in some places. Due to drought, the areas of middle-season rice fields were less than before. Cotton seedlings ran short in some places and cotton production was very uneven. The supply of chemical fertilizers is now insufficient and it has made agricultural production relatively difficult. Between summer and autumn the weather is changeable ahd floods are likely to occur. Therefore, we must make sustained and redoubled efforts and press on without letup until we do a good job in crash-reaping and crash-transplanting. We must fight hard in July, August, and September and wrest a bumper harvest of autumn crops, including middle-season and later rice and cotton.

The editorial says: Crash-reaping and crash-transplanting are decisive battles. Our guiding ideology must be to race against the season, guarantee quality, and overfulfill the quotas. The best time for crash-reaping and crash-transplanting is fairly short. Do not let an opportunity slip; it may never come again. If we seize this season, we can gain the initiative in the late rice growth period and create favorable conditions for wresting a bumper harvest.

The editorial points out: To strive for a bumper harvest for the whole year, we must continue to fight hard in July, August, and September, completely strengthen autumn crop field management, and lay stress on combating disasters. The drought situation in the province has been eased but some places, especially the hilly and mountainous areas in the northern part, still have a very serious drought situation. These places must continuously do a good job in combating drought. The rivers, lakes, and reservoirs have entered the flood season. They must maintain sharp vigilance against the possible serious floods and make all good preparations. We must also pay attention to the threats of plant diseases and insect pests, to the attacks by wind and hailstones, and to the occurrence of rain and low temperatures after autumn. We must make good preparation many kinds of disasters. In field management, we must also pay attention to popularizing effective technological measures for increasing production and work hard to increase per-mu yield. At the same time, we must vigorously develop diversification, work hard to run township enterprises well, unclog circulation, do well in the procurement of agricultural and sideline products, and try in every possible way to increase peasants' incomes.

Today's HUBEI RIBAO editorial says: The principal leading cadres of the prefectures, counties, districts, and townships must use their main energy in agriculture, go to the forefront of crash-reaping and crash-transplanting, of combating disasters, and of field management to exercise direct specific leadership, and help peasants and grassroots cadres get rid of their worries and resolve their difficulties. All trades and professions must also use their main energy to do everything for and support agriculture and contribute toward wresting a bumper agricultural harvest.

/6662
CSO: 4007/514

BRIEFS

COTTON SHORTAGE--The area sown to cotton in Hubei has declined for the past 2 years, as a result production is not meeting sales demand; in addition, the volume of exports has increased. At present, there is a shortage of more than 20,000 tons in stock. Hubei is a major cotton production area. Because the prices of other cash crops have increased recently, the area sown to cotton has continued to decline, in 1984 area declined by 8,100,000 mu, in 1985 area declined by 1,120,000 mu, and this year it declined by 380,000 mu. From January to June this year, supplies have not met demand by more than 30 percent compared to the same period last year. Production departments have requested 150,000 tons but there are only 127,7000 tons of cotton in storage. Based on estimates of the provincial Cotton Corporation, the sales volume in the province will increase 5 percent compared to last year, sales to other provinces will increase 8 percent, and exports will increase more than 100 percent. [Excerpts] [Chengde JINGJI XIAOXI in Chinese 8 Aug 86 p 1]

CSO: 4007/515

BRIEFS

DIVERSIFIED PRODUCTION--As of the end of June, the number of pigs on hand numbered 19,840,000, a 810,000 increase over the same period last year, or a 4 percent increase. In the first half of the year 60,210,000 pigs were slaughtered, an 11 percent increase over the same period last year. In the first half of the year the number of sheep on hand numbered 4,170,000, a 7 percent increase over the same period last year. Output of silkworm cocoons reached 34,000 tons, a more than 10 percent increase over the same period last year. In the first half of the year tea output exceeded 5,000 tons, an increase of 3.2 percent over the same period last year. As of the end of June, egg purchases were 64,000 tons, a 30 percent increase over the same period last year. [Excerpts] [Beijing ZHONGGUO CHENGXIANG XINXI BAO in Chinese 14 Aug 86 p 1]

CSO: 4007/512

BRIEFS

RURAL SAVINGS, LOANS--In the first half of the year, the net increase of rural savings was 248 million yuan, a net increase of 40.9 percent over the first half of last year. Agricultural banks and credit cooperatives have allocated 550 million yuan for rural loans, an increase of 19.2 percent over the same period last year, 71.4 percent of the loans have been used to develop the planting and breeding industries. Throughout the province 3,189,000 rural households have received bank loans. Town and township enterprises have received 156 million yuan in loans to support 233 construction projects. Loans of 40 million yuan have been given to poor areas to support 400 new projects. The monthly interest rate on loans to peasants has dropped from .66 percent to .44 percent. In the first half of the year rural cash income and expenses increased 18.9 percent and 4.9 percent respectively. The amount of currency in circulation declined by 77.1 percent over the same period last year. In the first half of the year sales of rural commodities earned more than 230 million yuan. [Excerpt] [Nanchang JIANGXI RIBAO in Chinese 16 Jul 86 p 1]

CSO: 4007/518

SHAANXI

BRIEFS

FERTILIZER SHORTAGE--In the first half of the year, the Central Government allocated 158,249 tons of chemical fertilizer to Shaanxi, a 55.15 percent reduction over the same period last year. Based on incomplete statistics, in the first half of the year, supplies of high-grade fertilizer declined by more than 400,000 tons over the same period last year. As of the end of May, there were 472,343 tons of chemical fertilizer in stortage, a 30.43 percent reduction over the same period last year. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 12 Jul 86 p 2]

TEA SALES--Based on information provided by the provincial Fruit and Tea Corporation, from January to May 3,713 tons of tea were sold, a 14.4 percent increase over the same period last year. As of the end of May, the amount of tea in shortage declined by 24.2 percent over the same period last year. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 9 Aug 86 p 2]

VEGETABLE OUTPUT--Based on statistics, the area sown to vegetables throughout the province is 1,820,000 mu, a more than 200 percent increase before price decontrol in 1984. The area of early crops has increased 20 percent compared to the same period, and the average per mu yield is more than 1,300 kilograms. Vegetable bases in the suburbs of Xi'an, Xianyang, Baowu, and Tongchuan have increased by more than 450,000 mu. In 1985 the volume of vegetables sent to markets increased more than 35 million kilograms compared to the time before price decontrol in 1984. The per capita intake of vegetables for urban residents increased from 0.28 kilograms to 0.4 kilograms. [Excerpt] [Xi'an SHAANXI RIBAO in Chinese 11 Aug 86 p 1]

CSO: 4007/512

SICHUAN

BRIEFS

INSPECTION GROUP RETURNS FROM SPAIN--Madrid, 31 Jul (XINHUA)--An agricultural and animal husbandry inspection group from Sichuan Province, led by Yang Rudai, secretary of the Sichuan Provincial CPC Committee, left Madrid for home today after winding up its 9-day visit to Spain. The group visited a hog-raising research center, an indigenous sheep and cheese production cooperative, and a livestock breeding and propagation center and held discussions with the agricultural department. In particular, it inspected the production of citrus fruits and the related scientific research work in Valencia, the main citrus-producing area of the country. Before the visit ended, China's Sichuan Provincial Academy of Agricultural Sciences and the Spanish National Agricultural Research Institute signed an agreement of intent to cooperate in the fields of agriculture and animal husbandry. Both sides expressed a desire to carry out technological exchange and conduct training in the production of citrus and other fruits and to cooperate in developing the techniques of transplantation of animal embryoes and refrigation of sperm. The Sichuan provincial agricultural and animal husbandry inspection group arrived in Madrid on 22 July. While touring and visiting various places, the group was accorded warm and friendly hospitality by various departments concerned. [Text] [Beijing XINHUA Domestic Service in Chinese 1244 GMT 31 Jul 86 OW] /6662

SILK OUTPUT, EXPORTS--As of the end of June, the output value of the silk industry in the province increased 3.5 percent over the same period last year, foreign exchange earned from exports increased 21.9 percent, and the output of silk products increased 13.2 percent. The 66 state-run silk reeling enterprises realized a 25.4 percent increase in profits after taxes compared to the same period last year. In the first half of the year exports of spun silk increased 360 percent over the same period last year, exports of silk and satin increased 85 percent, exports of silk finished products increased 34.7 percent, and foreign exchange earned was $38 million U.S. [Excerpts] [Chengdu SICHUAN RIBAO in Chinese 10 Aug 86 p 2]

GRAIN PROCUREMENT--As of 5 August, Sichuan Province had procured 1,645,900 tons of summer grain, exceeding the state plan by 2.3 percent. The province procured 852,700 tons of rapeseeds, fulfilling 94.7 percent of the state plan. [Excerpt] [Chengdu SICHUAN RIBAO in Chinese 21 Aug 86 p 1]

CSO: 4007/521

BRIEFS

FERTILIZER SALES--Based on statistics, in the first five months of the year, purchases of chemical fertilizer increased 27 percent over the same period last year, sales increased 19 percent, and reserves increased 16 percent. In May the sales volume was 570,000 tons, accounting for 40 percent of the sales volume in the first five months. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 9 Aug 86 p 2]

CSO: 4007/515

Agriculture

PRELIMINARY STUDIES ON HETEROSIS AND HERITABILITY FOR TEN TRAITS ABOUT GRAIN FILLING IN WHEAT HYBRIDS

Beijing YICHUAN [HEREDITAS] in Chinese No 2, Mar 86 pp 19-22

[Article by Zhang Xiaolong [1728 2556 7893], Wu Guohai [0702 0948 3189] and You Wenping [3266 2429 1627], Sichuan Agricultural Academy at Ya'an]

[Abstract] The interrelationship among some traits in the process of the filling out of wheat grains during the origin, development and storage phases and their effect on seed weight and seed plumpness was explored during the 1981-1982 wheat growing season at the Sichuan Agricultural Academy farm at Yaan. This was a study of the effects of physiology on yields undertaken with a view to improving yields. Samples were taken at regular intervals starting from the first day of flowering until maturity in order to check leaf area, dry weight of vegetation, dry weight of grain, seed bulk and seed plumpness. These data were used to derive a theoretical grain weight for each of the times when samples were taken during the growing season. Other calculations produced the percentage of hybrid heteroses, the degree of dominance of traits and the heritability of traits in a broad sense.

Heteroses and dominance of various traits manifested during various stages of seed development for the first generation of hybrids are detailed in tables and figures. Heritability of traits, including seed weight, for separate wheat hybrids as exhibited in the second generation are also provided.

A final summary notes the proneness to environmental influences of various physiological traits and of the total physiological process.

9432/7358
CSO: 4011/56

STUDY OF BACKGROUND VALUES OF HARMFUL ELEMENTS IN MAJOR AGRICULTURAL SOILS AND GRAIN CROPS IN 13 PROVINCES (MUNICIPALITIES)

Beijing NONGYE HUANJING BAOHU [AGRICULTURAL ENVIRONMENTAL PROTECTION] in Chinese No 3, Jun 86 pp 1-11

[Article by Agricultural Environment Background Values Combined Team]

[Abstract] Systematic research was conducted from 1979 through 1982 in 13 provinces and municipalities in China to determine the background values of various harmful elements in the agricultural environment, specifically copper, zinc, lead, cadmium, nickel, mercury, chromium, arsenic and fluorine. The purpose of this research was to establish a base line for the formulation of pollution indices, for evaluating environmental quality, for examining patterns governing the spread of governing pollutants, and for forecasting and reporting trends in the spread of pollution, as well as for making recommendations about proper use of pesticides and chemical fertilizers, for carrying out agricultural zoning, and for protecting and improving the agricultural environment.

Samples were taken in the provinces and municipalities surveyed of different kinds of soils at different depths and of different crops. Analytical methods were standardized for all laboratories engaged in the research and the same reagents were issued to all. Average values and standard deviations were determined for 10 different soil and grain specimens taken from different parts of the country for use as a basis for determining abnormal values. Extreme care was taken to insure valid values with as little contamination as possible from human activities, cross checks being made using various recognized methods for determining distribution.

Extensive tables convey survey methods and analytical procedures, and virtually all of the results obtained appear in tables with little additional textual explanation.

9432/7358
CSO: 4011/49

Veterinary Medicine

STUDY OF SEVERAL PROBLEMS ON SWINE TOXOPLASMA-NT STRAIN

Beijing ZHONGGUO SHOUYI ZAZHI [CHINESE JOURNAL OF VETERINARY MEDICINE] in Chinese No 2, Feb 86 pp 2-7

[Article by Zhang Shenxing [1728 1957 5887], Ji Yongsheng [1323 3057 3932], Gu Huiping [7357 1920 5493] and Qiu Xu [6726 6079], Nantong County Veterinary Medicine Station, Jiangsu Province]

[Abstract] The separation in 1978 of a toxoplasma strain from hogs afflicted with "high fever disease" gave rise to a 5-year research project on the strain. This strain, named NT strain as a result of having been found in Nantong County, differed from highly virile strains of toxoplasma not only in the degree of its virility, but also in the nature of symptoms, pathological changes and death rates. Research on the NT strain complements work done in foreign countries on the Beverley, S-273 and Ito strains.

Experiments were conducted on 10 generations of hogs and more than 30 generations of white mice, the infection of animals being done both through intramuscular and subcutaneous inoculation and through oral intake. Though animals infected with NT strain recovered spontaneously without medication, the use of certain sulfa drugs was found to decrease the number of cysts found in various organs of experimental animals and to hasten recovery from toxoplasmosis. Antibiotics were entirely without effect in treatment of the disease.

Experiments showed no increase in virility of the strain resulting from the infection of successive generations of hogs; infection of 33 successive generations of white mice with the strain failed to induce toxoplasmosis in them; both the injection and oral intake of NT strain produced the formation of long enduring cysts in numerous tissues of hogs and white mice alike; and NT strain produced relatively few trophozoites in either hogs or white mice. NT strain appeared to be less virile than Beverley strain and similar in toxicity to S-273 strain.

Tables interspersed throughout the text present findings at various stages of the experiments.

9432/7358
CSO: 4011/55

END

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China Report

AGRICULTURE

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RESTRUCTURING OF EXPORT STRUCTURE DISCUSSED

Beijing JINGJI RIBAO in Chinese 17 May 86 pp 1, 2

[Article by Bian Jiang [6708 3984]: "A Brief Discussion of the Production System for Agricultural Exports"]

[Text] Foreign Exchange Earned from Agricultural Exports Has an Important Status in National Export Earnings

The 1984 agricultural export total was $4.1 billion, about 17 percent of the national export total. Total exports of township and town enterprises were $3.3 billion, about 14 percent of the national export total; combined, the two come to about 31 percent, or nearly one-third of 1984 exports. The 1985 agricultural export total was $4.7 billion, 19 percent of the national export total. After collective study by the Ministry of Foreign Economic Relations And Trade, The Ministry of Commerce, and the Ministry of Agriculture, Animal Husbandry, and Fishery, it was tentatively planned by 1990 that $7.5 billion in foreign exchange will be earned from agricultural exports. This is 19 percent of the national foreign exchange total earned from exports, which is an 83-percent increase in absolute value over 1984, and even higher than the 57-percent proportion of the national export increase. Total exports of township and town enterprises might still be about14 percent and combined, the two items will be 33 percent of the national export total. This does not include processed agricultural exports. Processed agricultural exports in 1984 accounted for $6.7 billion (there is a certain duplication with the foreign exchange earned by township and town enterprises), which is about 26 percent of the national export total. Thus, it can be seen that agriculture occupies an important position in China in the earning of foreign exchange from exports.

Premier Zhao Ziyang pointed out in his explanation of proposals in the formulation of the Seventh 5-Year Plan that a good environment needs to be created for reform; latent strength also needs to be marshalled for subsequent growth; and, the people's lives also need to be improved. There are many contradictions. There are two keys to resolving these contradictions: forcefully raise enterprise efficiency, and energetically strengthen the foreign exchange earning potential of exports. It can thus be seen that strengthening the foreign exchange earning potential of agricultural exports is an imprtant strategic job for China's Ministry of Agriculture, Animal

Husbandry, and Fishery (including township and town enterprises) and the agriculture battle line.

It must be stated here in particular that foreign exchange earnings of township and town enterprise exports are an important component in earning foreign exchange from agricultural exports, they are also of great significance. The broad modernization of agriculture includes not only agriculture, forestry, and livestock, sideline industries and fishing, but also manufacturing, commerce, construction, transportation, and service industries. Township and town enterprises and farm village industrial sideline enterprises already have an important position in the modernization of agriculture and in farm village economics, and have become important economic pillars in economically developed districts. Township and town enterprise growth (certainly, there is also the growth in light textile and food industries) has already, in addition to the still to-be-further-changed situation of primary products and raw materials being the sole agricultural exports, greatly increased processed exports, especially in finely processed commodities, and by so doing greatly strengthened the foreign exchange earning potential of agricultural exports.

Setting Up A Production System for Agricultural Exports is an Important Reform in the Foreign Trade System and is an Important Problem in the Expansion of Agriculture Earning Foreign Exchange

Premier Zhao Ziyang pointed out several times in 1985 that there must be a good grip on establishing an industrial and agricultural export production system. He pointed out that this export production system--practicing a novel system different from that system currently in practice within the country, namely practicing a policy different from enterprises marketing within the country in price, quota system, testing standards, tax collection, and other aspects--make these enterprises and bases which specialize in export services well informed, profitable, energetic in producing exports, and truly create commodities which are superior in quality, low in price, market oriented, and promptly supplied. Only in this way will competitiveness increase and even more commodities be able to break into the international marketplace.

At present, the principle problem in agricultural exports earning foreign exchange is: production and operation of agricultural export commodities is comparatively scattered; scientific research production and processing technology are comparatively backward; commodity quality is low and unstable, and a steady supply of export quantities cannot be guaranteed; facilities for storage, transportation, and so on are uncoordinated; agriculture and trade are separate and production units for agricultural commodity exports lack enthusiasm, and so on. The key to solving these problems lies in reforming the foreign trade system, adjusting foreign trade policies, mobilizing all sides, and, principally, in mobilizing the enthusiasm of production enterprises and producers of agricultural exports. Establishing an agricultural production system to solve existing problems and to strengthen the potential of exports for earnings foreign exchange are completely necessary, and especially pressing.

The agricultural export system is a complete production system that specializes in undertaking or in principally undertaking commodity production from production bases and enterprises with high ratios of export commodities, which have scientific, processing, storage and transportation, sales and other enterprises that serve exports; they can be established principally for large-quantity export commodities, such as the establishment of export systems based on soybean, corn, vegetable oils, fruits, vegetables, and lean pits. Provincial borders can be broken through when forming specialized companies that are national in nature (small-quantity and local-specialty export commodities excepted). They can carry out policies and management methods different from enterprises that market inside the country, clearly stipulate standards, be run by an oversight committee of people who know the business, are public spirited and unselfish, and carry out evaluation. Reevaluation can be repeated once every 3, 5, 10 or 15 years. They can organize an export producer association or specialized export company board of directors from export production bases, from enterprises (including specialized households), and from export-servicing scientific, processing, storage and transport, marketing, and other enterprises. We have currently already set up a group of export production bases, enterprises, specialized households, and state-run farms that have higher technical standards and export commodity rates, and have accumulated some experience. Guangdong Province's Shantou Prefecture, for instance, has set up a group of commercialized agricultural companies, implemented the attracting [of foreign capital] and coordination within the country. Export product bases for processing industries for fruits, vegetables, and sea products are beginning to take shape, and the first step has been taken in forming a complete agricultural export production system where "agricultural trade" is combined with "trade, industry, and agriculture." Their experience is worth drawing upon.

The Principal Thing in Mobilizing Enthusiasm on All Sides for Completing the Job of Earning Foreign Exchange from Exports Is To Mobilize the Enthusiasm of Production Enterprises and Producers To Increase Production of Export Commodities. This Is the Key To Strengthening the Foreign Exchange Earning Potential of Exports

Enthusiasm must be mobilized by all concerned parties for completing the job of earning foreign exchange by exports, including the enthusiasm of production enterprises, foreign trade enterprises, enterprises that serve export trade, and local and relevant departments. The enthusiasm of production enterprises and producers needs to be mobilized in particular. Export commodity supply, export commodity variety renewal, and the raising of quality and competitiveness in the international marketplace are only possible if the enthusiasm of production enterprises and producers are mobilized.

The CPC Central Committee and the State Council have adopted and formulated several policy measures to encourage export commodity production and to expand foreign exchange earnings from exports, including the autonomy of major enterprises, the appraising and deciding of reasonable costs for foreign exchange requisitions, tax rebates and deductions, rights of holding and use of foreign exchange, suitable bonus increases for staff and workers who contribute to exports, and establishment of the principles of preferred guarantees for discount credit for the material, power, transportation, and so on necessary for exports. People's governments and departments at all levels should pragmatically implement these policy measures.

All agricultural export production bases, enterprises, and producers should fully recognize the importance of strengthening the foreign exchange earning potential of agricultural exports, firmly implement foreign trade policy under the leadership and unified program of people's governments at all levels and concerned departments, strictly obey relevant rulings and discipline, energetically produce commodities that are of superior quality, low price, marketable, distributive, competetive, and contribute in many ways to the earning of foreign exchange by exports.

Implement the Amalgamation of Agriculture and Trade and the Rational Division of Labor with a centralized Plan, a Centralized Policy, and a Coordinated and Centralized Facing Outward

Implementing the amalgamation of agriculture and trade can take diverse forms. For instance, organize specialized and jointly run export businesses from foreign trade enterprises and production bases; strengthen production base, enterprise, and foreign trade enterprise cooperation; establish the necessary integrated system and close production and sales links; and, organize an export commodities association from production bases, enterprises, and foreign trade enterprises for a coordinated facing outward.

A rational division of labor needs to be put into practice for foreign trade and production enterprises. The principal responsibilities of foreign trade enterprises should be to pioneer in international markets, provide foreign business information, energetically expand sales, and promote the greater production of products that sell well, and other specific foreign trade tasks. The principal responsibility of production bases and enterprises should be to develop product varieties, raise quality, raise standards, lower costs, and energetically complete the tasks of production of export commodities (including scientific research, production, processing, and so on).

All levels of agricultural, livestock, and fishery industries and township and town enterprise management departments should study and set agricultural export production plans for the Seventh 5-Year Plan and for each year, pragmatically implement and energetically complete export production tasks under the state's unified guidelines, according to the locale's actual conditions and the tasks undertaken in foreign exchange earning exports, under the leadership of the people's government, and in consulation with the Ministry of Foreign Economic Relations and Trade.

Agricultural, livestock, and fishery industries and township and town enterprise management departments will have to do a good job of development planning, construction, and management work for agricultural export production and enterprises under people's government leadership and a centralized plan and the coordinated support of concerned departments, and will have to organize many completely commercialized agricultural companies--for example, soybean, corn, fruit, and green vegetable companies--according to agricultural byproduct items and scales of production, processing, preservation, and transport and as made clear by the Ministry of Foreign Economic Relations and Trade. All companies need to attract the participation of specialized households on all sides, and provide the peasants who have land for which they pay compensation with capital, seedlings, fertilizers, technology, information, and other services. Peasants (specialized households and joint-contract households) to provide company export commodities according to product varieties, quantities, quality standards, and technical forms which are uniform and decided upon through consultation. According to the contract, companies need to give specialized and joint-contract households which undertake export production tasks a dependable redistribution of profits and dependable incentatives need to be given those completing their tasks.

A Good Job Has To Be Done in the Problem of the Matching of Various Agricultural Byproduct Production Links To Solve the Task of Export Production and Sales

The matching of various production links referred to here include: construction of large warehouses in front and rear line areas and equipment for drying, preservation, and storage, construction of exclusive routes for vehicles and boats in harbors and on rail lines, the construction of export purchase outlets, and so on. All that have these need the energetic cooperation and support of the relevant departments and locales, and preference in preparing implementation according to currently subordinate relations and capital channels.

The Agricultural Export Production System Is an Experimental and Demonstration District for the Specialization, Commercialization, and Modernization of Agriculture

Establishment of an agricultural export production system, creation of a large group of export production bases and enterprises, and development of a comparable scale of agriculture earning foreign exchange will not only be able to increase the foreign exchange earning potential of agricultural exports, earn a lot of foreign exchange for the nation, and advance the expansion of farm village and national economies, it will also be possible --due to the export production bases and enterprises theselves possessing better foundations and conditions (bases and enterprises need to be equipped with certain conditions)--to use a certain amount of capital and foreign exchange, to bring in more advanced technology and equipment, and to implement intensified operation (that is, operation where there is a certain degree of intellectual, technical, and capital concentration). For this reason, it should become an experimental and demonstration district for the specialization, commercialization, and modernization of agriculture, and serve the positive function of promoting China's ongoing specialization, commercialization, and modernization of agriculture.

13152/12948
CSO: 4007/424

WORLD BANK LOANS FOR AGRICULTURE 'DOING WELL'

Taiyuan NONGYE JINGJI XIAOGUO [AGRICULTURAL ECONOMIC RESULTS] in Chinese No 2, 25 Apr 86 p 52

[Article by the Foreign Investment Utilization Office of the Ministry of Agriculture, Animal Husbandry, and Fishery: "The World Bank Feels That Agricultural Loans to China Are Proceeding Smoothly"]

[Text] The World Bank assistant Bureau director for the East Asia and Pacific Region, David Te-na-mu [3676 4780 1191] led a project review group to China from 6 to 15 January 1986 to summarize the implementation stage of World Bank loan projects in China. The group also met with the Foreign Investment Utilization Office of the Ministry of Agriculture, Animal Husbandry, and Fishery.

Seven loan projects worth a total of $449.2 million among loan agreements China has signed with the World Bank since 1982 are being administered by the Ministry of Agriculture, Animal Husbandry, and Fishery. They include:

1. $60 million for agricultural projects in the north China plain for comprehensive control and improvement of 3 million mu of saline-alkaline land in Shandong, Henan, and Anhui provinces;

2. $80 million for reclamation projects in Heilongjiang Province to reclaim 3 million mu of wasteland and set up a modern commodity grain and legume base area;

3. $100 million to develop rubber in Guangdong Province for planting and replanting 600,000 mu in rubber plantations;

4. $40 million for seed projects to establish 18 modern seed centers in 14 provinces and autonomous regions;

5. $75.4 million for agricultural education and scientific research projects (one period) to equip 11 colleges and scientific research units;

6. $68.8 million for agricultural education projects (two periods) focused on equipping 29 colleges and 12 middle schools;

7. $25 million for agricultural scientific research projects (two periods) focused on equipping 15 scientific research units and 10 extension centers.

Implementation management organs have been established for all seven projects. Project offices have been established for all of the projects from central authorities down to provinces, prefectures, and counties, as well the agricultural colleges and scientific research units involved in the projects. About 2,000 specialized personnel are involved in project implementation and management. Moreover, various categories of experts have been assigned to participate in project design, construction, bidding, and purchasing work according to work requirements. The agricultural education and scientific research projects, for example, have organized more than 200 professors, instructors, and specialized personnel to participate in compilation of bidding documents and evaluation of bids. In addition, various types of small scientific research groups and advisory committees have been established according to the content of the projects and all types of experts are being brought in to participate in project construction.

Personnel training has been strengthened and a preliminary set of management systems and methods have been established. All units involved in the projects have been closely concerned with personnel training. The north China plain agricultural project, for example, has run 104 short-term training classes for 4,622 people since 1982. The Guangdong rubber project has trained 12,577 specialized personnel in various caegories over the past 2 years. All of the projects have established preliminary planning managment, materials management, engineering management, financial management, and bookkeeping and accounting systems to guarantee effective capital utilization and the progress of the projects.

Some of the seven projects already have obtained rather good economic and social results. There has been an obvious improvement in production conditions in the region involved in the north China plain agricultural project. The ability to resist natural calamities has been improved, land fertility has been restored somewhat and output of grain, cotton, oil crops, and other crops, as well as peasant incomes, have grown in comparison with regions not involved in the project. Per capita incomes there have risen to 250 yuan from 100 yuan prior to the project. The implementation of agricultural education and scientific research projects has brought about great improvements in agricultural education and scientific research conditions. The startup rate in experiments in the project units has risen from about 70 percent to more than 90 percent. The plan to send 450 students abroad during the first period has been completed and 53 have finished their work and returned to China. More than 30 have studied for Ph.D.'s and some of the students and workers who have returned to China have taken over responsibility for agricultural colleges and scientific research units. Teacher standards and the quality of scientific research personnel have risen substantially.

Some problems persist in project implementation, mainly in terms of the inadequate quality of equipment purchased through bidding. Other problems include insufficient capital for full outfitting because of readjustments in the prices of materials within China, losses to work schedules caused by natural disasters, and so on.

The head of the World Bank delegation said: "Implementation of the agricultural projects in China has gone rather smoothly and rather well. Good preparatory work for the projects is essential for good project implementation." In regard to the problems encountered in bidding, he felt: "Internationally competitive bidding still is a very good purchasing method and poor quality is an isolated phenomenon."

12539/12624
CSO; 4007/477

RENMIN RIBAO ON FARM PRODUCT MARKET FLUCTUATION

HK040131 Beijing RENMIN RIBAO in Chinese 29 Aug 86 p 1

[Commentator's article: "Take a Correct Attitude Toward Fluctuation in Supply and Demand of Agricultural and Sideline Products"]

[Text] Since the peasant households were allowed to handle their farm work independently and the market mechanisms were introduced, China's countryside has entered a fresh stage of developing the commodity economy. There are also some new contradictions in this stage. In recent years, it has sometimes been difficult to sell many farm and sideline products and sometimes difficult to buy them. Short supply and lack of demand appear alternately. How to correctly view and treat such market fluctuations so as to ensure the healthy development of production and circulation has become a question that we cannot evade in our rural economic work.

The foundation for commodity production is the markets. Market fluctuation is an inevitable and normal thing. It is a regular phenomenon in the commodity economy. It is impossible to stabilize production and consumption at a fixed level. Our only choice is to narrow the range of fluctuation. The commodity economy in our countryside is merely in the initial stage, and it will still take a rather long time to perfect the market mechanisms. At present, the agricultural production structure and the rural production structure are still not rational. When the total demand in the national economy changes sharply, it is no wonder the supply and demand of farm and sideline products change greatly and frequently. Therefore, comrades engaged in rural work in all localities should be mentally prepared for this.

In order to ensure the healthy development of commodity production and narrow the range of market fluctuation, we should first ensure the coordinated development of both our production and consumption structures. When production exceeds market demand, peasants will have to sell their products cheaply and their interests will be harmed; if production is reduced too much, there will be a shortage of grain and other farm products on the markets. In particular, because we have not opened the domestic market for some export-oriented farm and sideline products, whenever the conditions in international markets change, production will be greatly affected and peasants are often caught unprepared and can only utter their grievances. In general, the current fluctuation of supply and demand of farm and sideline products appears against the background of the all-round output increases in agriculture and is the result of the poor coordination of the production structure with the consumption structure, the blockages in the channels for commodity circulation, and the low consumption level. It is a structural fluctuation in the transition from a traditional planned economy to a market and commodity economy.

Market fluctuations cause us losses, and we can also draw some lessons from this experience. The current market fluctuation at least tells us of two facts: First, we should further diversify our production so as to be better able to withstand market fluctuations; second, we should replace the old idea that the more we can produce, the better; with a new idea of appropriate production and should arrange production in light of market conditions. Leading cadres, departments concerned, and producers should all study market for market fluctuation. We must note that it is of urgent significance to tap demands and smooth the circulation of commodities and that this will greatly help consolidate and perfect the market mechanisms. The departments concerned are making greater efforts to facilitate the buying and selling of farm and sideline products and increase the processing and storage capacity for these products. Producers themselves should also try hard to improve product quality so as to make their products more readily marketable. So long as all parties concerned can take a positive attitude to actively participate in market activities and facilitating the movement of goods, then the fluctuation of supply and demand can become a starting point and a motive force in developing and improving market mechanisms.

/12913
CSO: 4007/523

$122 MILLION PLANNED FOR AGRICULTURAL PROJECT

HK130536 Beijing CHINA DAILY in English 13 Sep 86 p 2

["Special to CHINA DAILY"]

[Text] China is to invest $122 million in a project that will boost production of cash crops and livestock and create about 41,000 jobs in two southern provinces.

The International Development Association (IDA) will support the project with a credit of $40 million.

The credit is for 50 years, including 10 years of grace. It carries no interest but has annual charges (0.5 percent on the undisbursed balances and 0.75 percent on the disbursed balances.)

The participating farmers will contribute $34.5 million towards the cost of the project, the Agricultural Bank of China will put up $27.8 million, local governments $16.1 million, and the central government $3.8 million.

The project will be carried out over five years in the "red soil" area of southern China, so named because of the characteristic red colour of their subsoil. the areas cover some 2 million square kilometres and their good climate and rainfall give them potential for a diversified agriculture.

Until now production there has been concentrated on the low-lying parts of the region, but the IDA credit will help finance the development of idle and little-used land in the uplands.

Abut 27,000 hectares of idle land will be terraced, planted and irrigated. Farm access roads will be built and existing infrastructure will be improved or extended. Houses, schools, clinics, warehouses, and laboratories will be built and construction and farm equipment will be provided.

/12913
CSO: 4020/436

PER CAPITA SAVINGS SURPASS 100 YUAN

Beijing NONGMIN RIBAO in Chinese 14 Jul 86 p 1

[Article: "Per Capita Savings of China's Peasants Surpass 100 Yuan--Focus of Rural Financial Work During Second Half of 1986 Is: Strive To Support Production of Grain and Marketable Products from Township and Town Enterprises, Guarantee Capital Supplies To Purchase Farm and Sideline Products"]

[Text] Peasant per capita savings in China's banks and credit cooperatives surpassed 100 yuan for the first time during the first half of 1986. A new situation has appeared in rural financial work during 1986, as manifested primarily in the following four areas:

1. An Increase in Network Points, Substantial Rises in Savings Deposits: The Agricultural Bank added more than 2,600 new savings offices and more than 900 special counters and agency stations throughout China during the first half of 1986. Total savings in savings deposits in agricultural banks and credit cooperatives in China stood at 84.9 billion yuan at the end of June 1986, up 12.9 billion yuan over the beginning of 1986 and up an additional more than 4.4 billion yuan over the same period in 1985. Agricultural banks also have issued 600 million yuan in financial bonds. Compared with past years, the pickup in rural savings occurred more than 1 month ahead of usual.

2. Credit Structures Are Becoming Rational and the Proportion Used for Crops and Breeding Is Rising: Agricultural banks and credit cooperatives had granted more than 30 billion yuan in agricultural credit by the end of June 1986. The proportion used for crops and breeding rose from 61.8 to 68.5 percent, while industrial and commercial loans and personal loans to peasant households declined. The credit is covering wide areas, is being issued in a timely manner, and is adapted to the needs of production.

3. Regional Credit Policies Have Been Implemented, Economic Results Have Improved: Agricultural banks in all areas have made actual local conditions the foundation for selecting the focus of loans. Agricultural banks in coastal regions and economic zones opened to the outside world have given primacy to support for agriculture earning foreign exchange. Zhongshan, Shunde, Nanhai, and Xinhui counties in Guangdong Province are supporting

810 enterprises earning foreign exchange that have increased the value of their exports by 31.4 percent. The Suzhou City Agricultural Bank is supporting more than 100 enterprises earning foreign exchange and foreign exchange income is up 40 percent over the same period in 1985. Banks at all levels also are using their own business services to establish horizontal integration with enterprises. According to statistics from branch banks in 14 provinces, municipalities and autonomous regions, more than 59,000 rural enterprises and urban industrial and commercial enterprises received support during the first half of 1986, while different forms of linkages have been established with scientific research organs.

4. Management of Funds Has Been Reinforced, Funds Circulation Has Been Promoted: According to statistics from 16 branch banks, more than 1 billion yuan of accumulated and idle credit had been cleared up and collected by the end of June 1986, enterprises were supplied with more than 1 billion yuan in circulating capital, and enterprises were assisted in bringing 1.5 billion yuan in loans in arrears up to date. There have been rather substantial developments in funding adjustments. A survey of 10 branch banks indicates that more than 1.4 billion yuan in capital was borrowed from other areas and systems, which has raised capital-utilization rates.

The Central Office of the China Agricultural Bank has proposed at the National Branch Bank Directors Conference currently in session that the focus of rural finance work during the second half of 1986 should be: utilizing capital collection to support the production of grain and marketable products of township and town enterprises, guaranteeing capital supplies for purchases of farm and sideline products, further implementation of regional credit policies, and support for horizontal integration within the rural economy to invigorate the rural economy.

12539/12624
CSO: 4007/477

OFFICIAL INTERVIEWED ON AGRICULTURAL TAXES

Beijing NONGCUN GONGZUO TONGXUO [RURAL WORK NEWSLETTER] in Chinese No 6, 5 Jun 86 pp 42-43

[Interview with a responsible person from the Agricultural Finance Department, Ministry of Finance under the rubric "Answers To Tough Questions": "On Questions About Agricultural Tax Collection"; date and place not given]

[Text] Many readers have recently asked in their letters about current agricultural tax collection. At the invitation of this newsletter, a responsible person in the Agricultural Finance Department, Ministry of Finance answers reader's questions briefly as follows:

[Question] What is included in the current scope of agricultural tax collection?

[Answer] The agricultural tax is a tax collected from all units and individuals engaged in production that have agricultural income, and is a means whereby the state secures, in accordance with tax laws, monetary income and the national income allotment for agricultural departments. According to "PRC Agricultural Tax Regulations" all who take part in agricultural production and all units and individuals with agricultural incomes are agricultural tax payers, and should pay agricultural taxes in accordance with the law. The current scope of agricultural tax collection includes: (1) Grain and tuber crop income; (2) commercial crop income, including cotton, hemp, tobacco, oil, sugar, and other commercial crop income; (3) agricultural and forestry special product income, including income from fruit, tea, mulberry, flowers and plants, nursery stock, and unprocessed medicinal products; income from bamboo, natural rubber, tussah silk, wood oils, raw lacquer and other special products; and, income from small animal products raised in fresh water and on sandy shoals; (4) other income which the State Council has ruled on or approved for the collection of agricultural taxes.

[Question] How are agricultural taxes calculated and collected?

[Answer] Different agricultural incomes are individually calculated and taxed according to the following methods: Grain and tuber crops are calculated and taxed according to normal yearly yields. Once the normal yearly yield is arrived at and remains the same for a number of years, taxes do not increase when production increases. Commercial crops are calculated in reference to normal yields from growing grain crops. Since the output value per unit area for commercial crop cultivation is generally higher than the output value for grain crop cultivation--and some are much higher--agricultural income should generally be calculated according to the size of the profits from the commercial crops and in reference to the grain crop burden, and must be generally set somewhat higher than the standard for the normal year in order to make the burdens roughly even. Agricultural taxes are to be calculated and collected by adopting differential tax rates by region to suit tax rates to differing agricultural economic conditions, and to equalize the burden on peasants in different regions.

Agricultural and forestry special products are to be calculated and taxed according to incomes from these special products. Actual calculation of product revenues are to be handled independently according to the differing circumstances. Taxes can be collected by the state at the time of purchase for those products which are primarily state purchased. Products where the larger proportion is produced and sold by the producer can be calculated and taxed by appraising income through survey and evaluation, or by adopting some other handy method. According to State Council regulation, the tax rate for agricultural and forestry special products is from 5 to 10 percent. The tax rates for different products are to be individually fixed within this range by provincial, self-governing region, and municipality people's governments according to the profits earned from different products, and under the principle that it not be lower than the level for the actual burden for grain fields. The tax rate for a few products that earn high profits is not to exceed 15 percent.

[Question] What rulings are there for reduction of and exemption from agricultural taxes?

[Answer] The agricultural tax regulations stipulate that the following agricultural incomes are either exempted from agricultural taxes or given preferential treatment for a certain period of time: (1) Agricultural income from land where scientific research organizations and agricultural schools carry out agricultural experiments, and agricultural crop cultivated on unoccupied strips of land next to houses; (2) the agricultural income from taxpayers who legally either reclaim land or use other methods to expand the area of cultivated land is exempted from agricultural taxes for from 1 to 3 years starting the year when it produces income; (3) income from land reclaimed through planned immigration is exempted from agricultural taxes for from 3 to 5 years starting the year when there is an income; (4) taxes are exempted for taxpayers for 3 to 7 years starting the first year there is an income from mountain land which has been newly reclaimed and cultivated, or has been newly reclaimed and returned to cultivation, in mulberry fields, tea plantations, fruit plantations, and other commercial forests. Taxpayers are exempt from paying taxes in cases of crop failure due to flood, drought, wind, hail, and other natural disasters according to the degree of crop loss--less exemption for lesser losses, more exemption for greater losses, and full exemption for total losses. Family members of revolutionary martyrs, military people disabled in the revolution, and others in the countryside who have difficulty paying taxes because of a lack of labor or for other reasons can, with approval by the people's government at the county level, be cared for by having their agricultural taxes lowered or by their being exempted from agricultural taxes. In impoverished regions where peasants have difficulty in production and livelihood, assistance can be given by reducing agricultural taxes under the precept that the policy of reducing or exempting taxes and the job of tax collection be carried out [only] after a decision is made by provincial, self-governing region, or municipal people's government.

In handling reduction and exemption of agricultural taxes, the taxpayer should first of all report the facts. A proposal stating the subject and the amount which is to be reduced or exempted is forwarded to the county government for examination and ratification founded on a thorough investigation by tax collection organizations and by democratic evaluation and decision. Policies should be thoroughly carried out, and reductions and exemptions are to be reasonable. In principle, verification according to the tax figure which has been reduced or exempted as stipulated by the policy should reach the taxpayer who is to receive a tax reduction or exemption before tax collection. First deduct the reduction, and then collect taxes. This is to avoid treasury refunds. Taxes that have been approved as requiring reduction or exemption and have been refunded by the treasury are to be handled individually by household, and no one is allowed to intercept or divert the return for other uses.

[Question] What is the real burden of China's agricultural taxes?

[Answer] It has been the consistant guiding principle of the party and state on problems of peasant burdens to have unified planning for the nation's cities and countryside with due consideration for the interests of the three sides of the state, collectives, and individuals. The policy for agricultural taxes since the establishment of the PRC has been for making burdens stable and reasonable. Agricultural tax collection was basically stabilized in the First 5-year Plan at 1952 tax collection levels. Somewhat more taxes were collected in 1958. There was a large readjustment downward in 1961. In the more than 20 years since, until now the agricultural tax burden level has remained steadily at the original levels. Alongside the growth in agricultural production, the real proportion of agricultural yields taken up by the agricultural tax burden has dropped yearly. In 1957, the real proportion of yields in agriculture taken up by the regular taxes of national agricultural taxes and local surcharges was 11.6 percent. It has now dropped to about 3 percent. It is higher in some places and lower in other places, but overall it is proper to say that the agricultural tax burden is light. What needs stressing here is that it is necessary to make a strict distinction between agricultural taxes and other apportionments and extractions. Finance departments have stated time and again that absolutely no unit or individual is allowed to apportion and extract any funds from the peasants in the name of collecting agricultural taxes. If a few localities are doing this, it is wrong and should be firmly corrected.

[Question] Does conversion to collection of money in place of grain according to the "inverse 3:7" price ratio increase the burden on peasants?

[Answer] Agricultural tax regulations stipulate that agricultural tax burdens be calculated in grain (local grains, such as rice, wheat, and so on). For many years agricultural taxes have been collected principally in grain. To suit the growth of farm village commodity production and the needs of farm village economic reform, agricultural taxes were changed with State Council approval starting in 1985 from being collected in grain to being converted into money. This is an important reform of China's agricultural tax collection system. Conversion into money is the carrying out of tax collection by converting the quantity of grain which should be collected in agricultural taxes and calculating it in currency. Agricultural taxes are uniformally converted into money according to the "inverse 3:7" price ratio of state grain purchases (including agricultural taxes for commercial crops). Actual crop quantities have not increased. Hence, there has not been an increase in the real burden for peasants. Looked at from a year of practice, cadre and peasant masses in the majority of places endorse this reform of agricultural taxes.

13152/9190
CSO: 4007/454

IMPACT OF REDUCED FERTILIZER IMPORTS SURVEYED

Beijing NONGMIN RIBAO in Chinese 1 May 86 p 2

[Article by Wang Wei [3769/0251]: "This Year's Chemical Fertilizer Total Demand and Total Transactions Adopt an Increasing Trend; Analysis by the Relevant Department in the Ministry of Commerce; Market Prediction"]

[Text] According to survey analysis by supply and marketing cooperatives and agricultural fund companies, transactions of chemical fertilizer for this year are in a growth trend after 2 years of continuous decrease. But there is much disparity between the different kinds of products and differences in supply and demand are larger. Analysis by kind follows.

Nitrogenous Fertilizer Demand Increases, the Gap Is Large

Last year's total national sales for nitrogeneous fertilizer by commerce departments was 44.48 million tons, a 9.53-percent decrease over the preceeding year. There is still a significant gap this year between supply and demand, and there are disparities between varieties as the need of society increases this year. Urea is of good quality, is highly effective, easy to use, and sales have been good for a long time, but contradictions in supply and demand are large. Simple nitrogeneous fertilizer of ammonium bicarbonate, which took up 60 percent of the total production of nitrogenous fertilizer's, will show obvious improvement in sales this year because of the State Council's decision to adopt the temporary measure of lowering its price and decreasing imports of superior quality nitrogenous fertilizers. It is only necessary to speedily implement the price-cutting measure, encourage peasants to produce more grain by applying more simple chemical fertilizer, and sales will have a larger increase over those of last year. There are, however, disparities between districts. Although demand has increased in Yunan, Sichuan, Shanxi, Hunan, Beijing, Shanghai, and Heilongjiang, production is sizable and still exceeds sales; a portion can be exported. In some other places, supply and demand are basically even or supply does not meet demand. Portions of some areas might sell out in the peak season of fertilizer use. The change in quantities of ammonium nitrate and ammonium sulphate produced and sold is not large, supply and demand are basically balanced, and its proportion in nitrogenous fertilizer sales has dropped yearly. Ammonium chloride production exceeds demand. As for the Dalian Chemical Factory and the Tianjin Alkaline Factory's production of ammonium dichloride, sales volume in the northern arid district is still increasing a little, though the sales price has dropped greatly. There is still demand in the southern rice paddy districts, but exports are difficult and cannot be transported. Liquid ammonium hydroxide, being an aqueous nitrogenous fertilizer, is easy to use and losses are less volitile, but sales volume has dropped for successive years. An instance of the above is the 30-percent drop last year for Shanghai.

Phosphorus Fertilizer Demand Rebounds Everywhere

Demand in various places rebounded generally and the scope of the rebound was a bit larger in some areas. In the past several years, industrial production dropped and a large group of enterprises stopped production due to nationally produced phosphorus fertilizers, thus simple phosphorus fertilizers in particular, were seriously unsalable. Quantities used in agriculture have dropped for consequetive years, thus the nitrogen-phosphorus ratio is out of balance. The bringing into play of the benefits of increasing nitrogenous and potash fertilizer production has already been affected. The drop in the content of all phosphorus and water aqueous phosphates reflected in the soils of many areas will, if the addition of phosphorus fertilizers continues to drop, necessarily bring inestimable harm and affect future agricultural production. In this connection, attention has already been drawn, or is in the midst of being drawn, to it, and it is predicted that there will be a very large increase over last year in sales volume for society this year. Except for Yunnan, Guizhou, Sichuan, Zhejiang, Hebei, and other places where phosphorous silicate resources are plentiful, phosphorous fertilizer yields larger, and supply still exceed demand, there will be gaps to various degrees in supply and demand in other places.

Potash Fertilizer Sales Situation Looks Good

Total sales last year by commerce departments nationally for potash fertilizers were 905,000 tons, an 8.24-percent drop over the preceeding year. Supply and demand has changed somewhat for this year. The principle area of sales and use for potash fertilizers is currently still the south central area, especially the provinces of Hunan, Guangxi, and Guangdong. Total sales last year for these three provinces amounted to 462,000 tons, 51 percent of that nationally. Jiangxi, Zhejiang, Henan, Fujian, and Jaingsu are second, but the sales sitution looks good in some northern areas, such as Hebei, Liaoning, and so on. Sales for this year in the above-mentioned areas are still tending to rise, but there are shortages in the raw materials available for this year because of drops in imports and reductions early this year in commercial reserves. This phenomenon deserves attention.

Complex Fertilizers Are Welcomed

Total sales last year by commercial departments nationally were 7.75 million tons, a 31.2-percent increase over the preceeding year, and set an all-time high. Peasants have welcomed complex fertilizers. This year demand increased greatly, and ammonium phosphate and tri-element compound fertilizer in particular have been proclaimed as "divine fertilizers" by the great masses of peasants and have sold even more speedily. The principle area of complex fertilizer sales is currently still in the northeast and Huabei areas. Sales volumes in these two areas are nearly one-half the national volume. This year, since imports have been reduced by a large volume and complex fertilizers are basically not produced within the country, it is estimated that supply-demand contradictions will be very prominent.

Trace-Element Fertilizer Market Outlook Is Vast

Along with the unbroken rise in scientific cultivation standards of peasants and the increase for successive years in the quantities of nitrogenous, phosphorous, and potash fertilizers used, there has been an ongoing and unbroken expansion of sales and quantities used of all kinds of trace-element fertilizers, also achieved the very good benefits of increased production, and was known and accepted more each day by the great masses of peasants. If zinic sulphate is applied on paddy rice, corn, and other crops, by investing a few dimes on each mu of land it is possible to get a return of increased production of over 100 jin. Of all the trace elements, zinic sulphate is the variety which is used in the largest quantities, over the widest area, and which has the best future for growth. Moreover, the use of boric fertilizers on rape, oranges, and tangerines, and cotton, the use of molybdenum fertilizers on soybeans, the use of copper fertilizers on paddy rice, iron fertilizer on fruit trees, manganese fertilizer on wheat, broad beans, and so on have all achieved satisfactory results in increased production. The increased production results are sometimes decidedly obvious. Looking at current and future trends, the outcome for trace-element fertilizer markets is absolutely vast, but current production and operation is still unable to get the position it should have with relevant departments and enterprises. If these problems can be solved quickly, trace-element fertilizer sales and quantities used will have a relatively greater increase.

13152/12948
CSO: 4007/424

FIRST LAND DEVELOPMENT PLAN UNDERWAY

OW141441 Beijing XINHUA in English 1315 GMT 14 Sep 86

[Text] Beijing, 14 September (XINHUA)--China's first national program for land development is being worked out, it was learned here today.

A draft program, up for discussion at a national meeting held by the State Planning Commission today, covers utilization of natural resources, overall distribution of productive forces, comprehensive regional development, and management of land.

The exploitation and utilization of land, water, minerals, forests and sea make up an important part of the draft program. To solve the problem of land shortage, for example, the draft calls for higher efficiency in the use of land, adjustment in land utilization pattern and control on the use of land for construction purposes. To tackle the problem of severe water shortage in north China, it proposes diverting water from rivers in the south to the north. Distribution of energy bases is also included.

With regard to the distribution of productive forces, the draft program lays different emphasis of economic development for the eastern, central and western parts of the country, marking off areas as centers of farming, forestry, animal husbandry, fishery, oil and coal production. A blueprint for the expansion of the transportation network is also provided.

A number of areas will be designated as key areas of economic development: economically-developed areas, energy and minerals development areas, key areas in the distribution of productive forces and pivotal areas in opening to the outside world.

Land management will focus on the harnessing of rivers, control of soil erosion on loess highland and land decertification in north China, improvement of saline-alkali soil in the Yellow River and Huai River basins and environmental protection in the densely populated areas.

/12913
CSO: 4020/436

IMPROVED TREATMENT OF AGROTECHNICIANS URGED

Beijing RENMIN RIBAO in Chinese 19 Jul 86 p 3

[Article: "Specialists in the China Agriculture Society Earnestly Request Reforms To Improve the Treatment of Agrotechnicians"]

[Text] According to a report in ZHONGGUO KEJI BAO [China Science and Technology], some experts in the China Agriculture Society have called for reforms to change the difficult situation now facing rural technical service organs throughout China by improving the treatment of agrotechnicians. Otherwise, agricultural production in China will be seriously affected.

The experts in the China Agriculture Society pointed out that agrotechnical service organs are very ill-adapted to the economic development situation, as manifested in the following main areas:

Agrotechnical service units have shortages of administrative funds. Tongcheng County in Anhui Province had contractual responsibility administrative expenses of 129,000 yuan in 1985. After employee wages, business expenditures per capita were only 1.65 yuan per month. Guizhou Province's Tongren Prefecture Agriculture Bureau reported that the bureau, which has 105 employees and 10 counties under its jurisdiction, had only 50,000 yuan in business funds, and even business trips were difficult. The shortage of administrative funds in some counties has meant that they have even been unable to accept newly assigned college and polytechnical school graduates.

Agrotechnicians have poor working conditions and simple, crude equipment. There basically are no instruments or equipment for agrotechnical extension work, and they have had to depend for a long time on "their legs and mouth." Agrotechnical personnel in some areas have been in a situation of "no desk for their office, no bowls to eat from and no place to sleep" for a long period. Guizhou Province's Tongren Prefecture, for example, currently has 82 prefectural and township agrotechnical stations and 1,069 employees. They have less than 1.6 square meters of office space per person and six agrotechnical stations have no offices and 33 stations have no dormitories at all. Xiangxi Tujia-Miao Autonomous Prefecture has 60 stations, but three-fourths of them have no fixed buildings or the necessary instruments and equipment.

The poor treatment of agrotechnicians has caused many of the personnel to "leave the area." State Council resolutions concerning this question stipulate that wages paid to agrotechnical personnel at the first line of production could float upward one grade, but many areas cannot afford to do so. Most agrotechnical service personnel below the county level and peasant technicians are recruited through testing. Most of them already have worked for 10 or 20 years, but their wages are lower than those of educational personnel, financial and taxation personnel, broadcast personnel, and others, which has caused many peasant technicians to change their line of work. Hengyang City in Hunan Province originally had 451 peasant technical personnel, but most of them have left. The number of peasant technicians in some counties in Zhejiang Province has fallen by 70 to 80 percent.

The persistence of these problems over long periods has seriously affected the extension and popularization of advanced agricultural technologies. Locusts, wiped out 30 years ago, have reappeared and there has been an obvious increase in the area of locust outbreaks during 1986. There was an outbreak of wheat scab in Henan Province during 1985, and the lack of guidance by agrotechnicians caused a reduction of nearly 900 million KG in wheat output in Henan.

Given the present difficult situation in agrotechnical service work, experts have proposed that:

1. State policies concerning reinforcement of agrotechnical service organs and manpower should be implemented and treatment of peasant technicians should be improved. We also should strengthen construction of township and village agrotechnical service organs.

2. Agrotechnical service organs should be permitted to manage the relevant agricultural means of production. County plant protection stations or plant protection companies, for example, can be permitted to "evolve and sell pesticides," agrotechnical stations can adopt a method that integrates technical contractual responsibility with supplies of materials and collect low-level service-compensation fees to make up for some of their inadequacies in administrative funds. It is hoped that finance and taxation, commercial, industrial-commercial, and other departments will provide support.

3. State and local financial administrations should increase administrative funds for agrotechnical units according to actual conditions to permit agrotechnicians to make full use of their skills and knowledge and serve rural S&T extension work.

12539/12379
CSO: 4007/474

BRIEFS

QUALITY FARM PRODUCE BASES--Shenyang, 14 September (XINHUA)--Work has begun to build 113 quality agricultural produce bases throughout the country, according to a recent meeting held by the Ministry of Agriculture, Animal Husbandry and Fisheries in Xingcheng, Liaoning province. These bases will produce fine quality fruits, vegetables, rice and other farm products. By the end of August, it was disclosed at the meeting, more than 100 million yuan had been spent by localities and the state. Dalian and Harbin in northeast China, designated to produce superior quality apple and vegetables, have made twice as much investment as they are asked. The 113 quality farm produce bases are spread in 27 provinces, municipalities and autonomous regions and are scheduled for completion by the end of the Seventh 5-Year Plan period in 1990. An official from the Ministry of Agriculture, Animal Husbandry and Fisheries said that 59 quality fruit bases and 11 quality rice producing bases have already completed projects for providing fine strains of seeds and nurseries. Projects for storing and preserving fruit and for processing rice have started. It is expected that all these bases will begin to provide superior farm produce to domestic and world markets within the next four years. [Text] [Beijing XINHUA in English 0730 GMT 14 Sep 86 OW] /12913

AQUATIC PRODUCTS HARVEST--Beijing, 9 September (XINHUA)--The total output of China's aquatic products is expected to reach eight million tons this year, the Aquatic Products Bureau of China told XINHUA today. Since last year, great progress has been made in the quantity, variety and quality of aquatic products. Compared with the same period last year, major aquatic products have shown over-all growth during the first half of this year. Fresh and sea-water production has increased more than 500 thousand tons over last year. This year, China has paid more attention to the selective-breeding of fish, and the production of shrimp and crabs has reached its highest output of recent years. The use of granulated feed is spreading fast. Now, most fishing areas are willing to buy granulated feed or are preparing to construct feed-processing plants. Because of improved varieties and the development of high quality special products, China's aquatic products have received wide acclaim and a growing market awaits them. [Text] [Beijing XINHUA in English 0657 GMT 9 Sep 86 OW] /12913

STUDENTS AID IN UNDERDEVELOPED AREAS--Beijing, 15 September (XINHUA)--Teachers and students from eight major agricultural universities will go to underdeveloped areas for three years to promote advanced science and technology. The universities include the agricultural universities of

Beijing, Shenyang, Nanjing, Northwest China, Southwest China, Central China and the Beijing University of Agricultural Engineering, according to a recent decision by the Ministry of Agriculture, Animal Husbandry and Fisheries of China. The experts from the Agricultural University of Central China will introduce cultivation techniques for mushroom and edible fungi to Dabie Mountain in Central China's Hubei province. After investigating the situation in Jianping county in northeast China's Liaoning province, representatives from Shenyang University of Agriculture will help local residents with more than 30 production items which will increase economic results and better utilize natural resources. Other areas to receive help include counties in Shanxi, Hubei, Sichuan and Guangdong provinces, and Yanqing county near Beijing. [Text] [Beijing XINHUA in English 0242 GMT 15 Sep 86 OW] /12913

FORESTRY INDUSTRY REFORM--Addressing the current National Symposium on Reform of the Economic Structure of China's state-owned forestry industry, Yang Zhong, minister of forestry, pointed out: Presently, the paramount issues in China's forest zones are: 1) a crisis in forestry resources; and 2) economic woes faced by the enterprises because of internal and external economic entanglements. Reform of the economic structure is the best solution to the above problems, he stressed. Dwelling on the measures for reform of the economic structure of the state-run forestry industry, Yang Zhong said: It is first necessary to readjust timber production, and press for solving the problem of excessive lumbering. Second, it is essential to increase investment in the forestry industry in order to expand the reserve forest resources. Third, it is imperative to readjust the production structure and fully tap and utilize the various resources of the forest zones. To foster forestry development we must develop industry and sideline productions and promote lateral economic cooperation between the forest zones. Fourth, we must ensure the healthy development of the collective economy by shattering the publicly owned enterprises' excessive and rigid control over the collective enterprises. Fifth, we must improve operations and management so as to further perfect the various forms of production responsibility systems for the forestry industry. [Text] [Beijing Domestic Service in Mandarin 1100 GMT 27 Aug 86 OW] /12913

CSO: 4007/523

ANHUI

BRIEFS

FLOOD PREVENTION--A 270-km Bengbu-Huaibin microwave communications line in the Huaihe River Basin, China's first project to modernize communications for flood prevention, has been completed and put into operation. This line was purchased by the Chinese Government last year, using the grant provided by the Italian Government. It was jointly installed by Chinese and Italian engineers and technicians. The project comprises a data processing central in Bengbu; six microwave stations in Bangbu, Fengtai, Yingshang, Huaibin, and two other places; and eight telemetric stations located in the flood region. The computerized telemetric stations regularly measure water level and rainfall. By means of the microwave facilities, the data obtained is automatically input into the central station to be processed by computers and flood warnings will be issued promptly. [Summary] [Hefei Anhui Provincial Service in Mandarin 1000 GMT 23 Jun 86 OW]

WATERMELON OUTPUT--Based on statistics, in Anhui the area sown to watermelon is 1,160,000 mu, an increase of 360,000 mu over last year; it is estimated that gross output will be about one billion kilograms. [Excerpt] [Hefei ANHUI RIBAO in Chinese 20 Jun 86 p 2]

CSO: 4007/455

RECLAMATION DISTRICT BROUGHT INTO LINE WITH STATE POLICY

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION] in Chinese No 3, 24 Mar 86 pp 36-37

[Article by Liang Zhenzhuo [2733 2182 0587], director of the Guangxi State Farms and Land Reclamation Joint Agricultural, Industrial, and Commercial General Company: "Persist in Putting Reform First; Reclamation Districts in Various Places"]

[Text] Guangxi:

In recent years Guangxi Province's state farms have had very big growth. Currently in the reclamation district, 2.36 million mu of land are in operation, and there are a total of 80,000 staff and workers, 50 farms, 6 directly affiliated industries and enterprises, 117 farm-run industries, 264 commercial network outlets, 1 staff and worker university, and 2 research institutes. These units are widely scattered across 7 perfectures and 31 counties and cities of the self-governing region.

After 35 years of arduous struggle, the reclamation district has already established a commodity production base using principally subtropical crops and a cooperative agricultural, industrial, and commercial operation. It has become an important base for the export of Guangxi Province's agricultural and livestock products. According to the statistics for the 5 years of the Sixth 5-Year Plan period, the total production value for industry and agriculture was 940 million yuan, a 10.8-percent mean annual increase. Profits were 71.82 million yuan, an 8.3-percent annual increase, and 70.52 million yuan were turned over to the state in taxes, a 9-percent annual increase.

In the midst of reform, our reclamation area principally seized the following several tasks:

1. Energetically Carried Out Reforming the Economic Systems of Enterprises

After the 3rd Plenum of the 11th CPC Central Committee, we, like our reclamation district brethren nationwide, implemented complete fiscal responsibility for enterprises, implemented the "four certains and one reward," "joint production rewards," and other forms of the economic responsibility system for staff and workers, and launched an attack against the two "big rice pots."

In the spring of 1984, we also implemented everywhere staff and worker family farms, created a model of a large farm encompassing small farms, and brought about a satisfying step forward in the reform of the state farm economic system. Currently, 23,808 family farms with 41,068 workers and staff participating have been created in the reclamation district, 95.5 percent of the reclamation district's total agricultural and livestock work force. Creation of the family farm better solves the problems of closely linking the means of production with laborers, and closely linking the fruits of labor with the rewards for that labor, mobilizing the enthusiasm of workers and staff, and promoting growth in productivity. The self-governing region's general company steadily shifted the powers of production and operation of people, finances, material, production, and supply over to enterprises on the basis of the decision of the 3rd Plenum of the 12th CPC Central Committee, and a portion of the administrative- and directive-style organization changed into a managerial- and service-style organization, shrinking nonproductive personnel, reducing the burden of workers and staff, and strengthening enterprise vigor.

2. Spread the Strengths and Avoid the Shortcomings, and Adjust Production Structure

Fully tap the advantages of the subtropical region of the Guangxi reclamation district, change the structure of only dealing in rubber, put into practice an agricultural structure which is based on fruit and is cooperatively run, and make hemp, tea leaves, sugarcane, rubber, grain, livestock, forestry, and other production achieve comprehensive growth. The area in fruit grew from 30,400 mu in 1978 to a current 74,100 mu. Annual yields rose from 3.15 million jin to 81.23 million jin. Tea yields increased from 12,000 dan to 5,300 dan. Sisal hemp yields rose from 2,169 tons to 4,755 tons. Others, such as forestry, livestock, the raising of freshwater fish, and so on, have all also expanded. In industry, energetically develop processing industries that serve agriculture and family farms, and build a group of industries of a new kind that link agriculture and industry. Six sugar factories with a daily pressed sugarcane capacity of 4,850 tons, 6 canning factories with an 18,000-can annual production, 6 rope factories with a 4,000-ton annual production of white palm rope, and 22 brick factories with an annual production of 100 million red bricks have already been built by the reclamation district. In commerce, 264 commercial network outlets were set up, a 37.5-percent increase over 1978. Having gone through several years of adjustment, the Guangxi reclamation district's agricultural, reclamation, and production structures have already brought into preliminary play the advantages of the district, making growth in primary, secondary, and tertiary industries better coordinated and achieving better economic results.

3. Do a Good Job of Consolidating Enterprises, and Raise Agricultural and Reclamation Enterprise Quality

The Guangxi reclamation district was included among the 56 units in the plan for enterprise rectification (including 46 state-run farms and 10 industries). Having undergone rectification, leadership groups were changed according to the requirements of ability and political integrity. According to that plan, the mean age for new leaders was 43.4, included 182 with upper-middle technical and high school or better cultural levels, 29.7 percent more than before rectification. There were 116 with professional titles, an increase of 54 from before rectification. After rectification, state farms and land reclamation enterprises further perfected economic responsibility systems of various kinds, and formed a preliminary managerial system which joined responsibility, power, and benefits. At the same time, political ideology work in enterprises was strengthened, and construction of spiritual civilization promoted. A foundation was laid for the modernization of enterprise management.

Reform To Promote Development: Currently, the Guangxi reclamation district is fighting toward the goal of establishing "the three bases and one center": a production base for the stabilization of domestic and foreign trade products, a model base for specialization, commercialization, and modernization of agriculture, a supply base for nonstaple food production in major cities and factory-mining districts, and a service center for farm villages for advanced techniques, transportation, and sales.

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CSO: 4007/409

DEVELOPMENT STRATEGIES OUTLINED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL TECHNOLOGY] in Chinese No 4, Apr 86 pp 33-36

[Article by Yu Yintang [0060 5593 2768] and Dai Shuxin [2071 3579 0207]: "A Discussion of Strategies for Developing Heilongjiang Province's Dominant Industries"]

[Text] To permit additional improvements in readjustments in industrial structures and development of our dominant industries and establishment of dominant industry systems, this article will make actual conditions in Heilongjiang Province the starting point for a preliminary discussion of several points.

I. Apply the Marxist Principle of Differential Land Rents To Readjust Industrial Structures and Establish Dominant Industries Based on the Rural Commodity Economy System

Readjustment of industrial structures is a strategic measure for the transformation of rural areas from a self-sufficient natural economy into a commodity economy. If we wish to do well in readjustments in industrial structures, we must observe a special law of commodity production--and a concrete manifestation of the law of vlaue in agriculture--the principle of differential land rents. This is a theoretical foundation that can guide readjustments in industrial structures.

There are differences in principle between agricultural production and industrial production in the role and form of the law of value. Industrial production determines value by using costs plus average rate of profit. That is to say, industrial production conditions undergo competition and there are opportunities for equal utilization for each capitalist. Agriculture, however, is different in that Marx figuratively employed a waterfall-powered machine as a metaphor when he said that "controlling this natural force still may cause it to become a monopoly in the hands of the controller. This sort of natural force in its essence is not due to the fact that this sector of production always has the necessary conditions nor that this sector of production normally can form the conditions." (Footnote 1) (LDAS "KAPITAL", Vol 3, 1966 edition, pp 756, 757) Because the limited nature of land in agricultural production means that those who administer land with superior natural fertility and location can obtain rather stable surplus incomes in a situation in which production prices for lower grade products determine market prices. This means that greater amounts of differential incomes are earned. Under private ownership of land, this becomes the source of differential land rents. Under a socialist system with a commodity production, however, this becomes the differential income of labor. We can use soybean production as an example. According to a 1979 survey of 73 teams in 58 counties in the three northeastern provinces, the net income per mu of soybeans was 4.5 yuan in Liaoning, 8.1 yuan in Jilin and 17.6 yuan in Heilongjiang. This means that the income per mu of soybeans in Jilin was less than half that in Heilongjiang, and that Liaoning was only half as much as Jilin, so the relative income differential between Liaoning and Heilongjiang is a factor of 4.

The substantial differential incomes in soybean production in Heilongjiang are apparent, but the situation is different for corn. Corn yields per mu were 717 jin in Liaoning, 560 jin in Jilin and 444 jin in Heilongjiang in 1979. The net income per mu was more than 21 yuan in Liaoning and Jilin and more than 25 yuan in Heilongjiang, only 4 yuan more than in Liaoning and Jilin. It is obvious that if each province made full use of its own advantages and produced goods with greater net incomes, then the state could use fewer inputs and obtain greater output and derive optimum economic results. For this reason, readjustments in industrial structures based on dominant resources can provide benefits for the state as well as local areas. The surplus income in these dominant industries has a managerially monopolistic quality, so it is not only rather stable but also cannot be obtained by regions lacking these production conditions. This can lead to permanent competition between commodities in these dominant industries.

In consideration of this fact, readjustments in industrial structures in rural areas should begin with local natural resources and focus closely on the goal of developing the commodity economy, and they should take aim at Chinese and international markets and establish unique structure systems for local dominant industries.

II. Make Readjustments in Crop Structures the Breakthrough Point, Lay a Foundation for Development of Dominant Industry Systems

Readjustments in internal farm structures occur mainly in the form of crop structures. Because agricultural production is a combination of social reproduction and natural reproduction, crop structures essentially involve proportional inputs of human labor. They also form the foundation of rural industries as a whole. By starting with real conditions in Heilongjiang Province, we feel that the focus in crop-readjustment strategies should be superior commodity grain, special cash crops, and high-yield forage grass.

For grain crops, we cannot be satisfied with the usual recommendation that we establish base areas for commodity grain. Instead, we must make the establishment of base areas for superior-quality commodity grain a key short-term task and long-term development strategy. The main thing is not, however, that Heilongjiang has advantages in normal commodity grain. What are Heilongjiang's advantages in high-quality commodity grain, then? We feel that the key is the "two big and one small": rice, soybeans, and spring wheat.

We will discuss rice first. Heilongjiang's cold climate bestow on its farm products a fine-grain quality. The quality of rice is especially high. Not only is the quality of the rice superior to common paddy rice from the south, but it also includes the famous northern rice varieties, Xiaozhan Rice, Jingxi Rice, and others, that should receive the necessary attention. The poor quality of paddy rice in China over the past few years and the lack of sales outlets in international markets means that prices are at their lowest. In the Hong Kong market, for example, China's rice sales dropped from 60 percent of total imports in 1978 to 47 percent in 1983. The price per ton is $340 for rice from Tahiland and $500 per ton for Australian rice, but the price for Chinese rice is only $320 to $330 or 34 to 36 percent less than the price for Australian rice. Because of their natural conditions, however, neither Australian nor Thai rice can match Heilongjiang's superior rice. For this reason, if we use our high-quality rice to open up international markets, we could make better use of the Hong Kong, Japanese, and other markets and earn more foreign exchange for the state. We should establish a series of trade-industry-agriculture industrial systems for all links in breeding, cultivation, refining and processing, storage, packaging, and other areas. This would make greater contributions to the state and it would provide multiple benefits to local economic prosperity and people's income.

Not only is Heilongjiang rice of superior quality, but it also has high yields, so the potential for development is great. Heilongjiang had only 1,674,000 mu and total output of 410 million jin in 1949. These grew to 3,156,000 mu and 1.59 billion jin in 9180 and to 5.83 million mu and 2.82 billion jin in 1985, a sixfold increase over the period just after liberation.

Moreover, there is a large area of land in Heilongjiang Province that could be developed into paddy. According to scientific estimates, there are 4 million mu in the Sanjiang plain region alone. This gives Heilongjiang the concrete conditions for establishing a base area for high-quality paddy rice production.

We can look at soybeans next. China is famous throughout the world as the "Land of Soybeans." Heilongjiang is the home of soybeans in this "Land of Soybeans." The three northern provinces are China's main soybean-producing region. Soybean output in Heilongjiang was 3.15 billion jin in 1983, which was 51 present more than the combined output of Liaoning and Jilin. It can be said, therefore, that soybean cultivation is one of Heilongjiang Province's dominant industries.

Soybeans have both cash crop and grain crop components. Their economic and value and nutritional value are much greater than cereal grain crops.

One jin of soybeans is equivalent to the nutritional vlaue of 3.3 jin of wheat, 5.2 jin of paddy rice, or 4.9 jin of corn. The price of soybeans in current international markets is 3-fold greater than the price of wheat. There also are substantial opportunities in the soybean-processing industry. Every part of the soybean is valuable. Using modern processing techniques, each 100 jin of soybeans can provide 18 or 20 jin of soybean oil and 72 jin of crude protein. The crude protein can be turned into puffed protein and we also can derive pure soybean protein. There is more pure protein in 1 jin of pure soybean protein than in 5 jin of lean pork. Expanded protein mixed into sausage and ham has nutritive value as well as good taste. A processing plant handling 50 tons of soybeans a day requires only a few 100,000 yuan in additional investments and can make 400 yuan in profits per 100 jin by processing oil, expanded protein, and husks. Yearly profits in a processing plant that processes 15,000 tons of soybeans a year could reach 6 million yuan. It seemed in the past that there were no routes for development of township and town industries, but we can see now that there are many opportunities if we rely on our crop advantages. Soybeans definitely are the foundation for the formation of Heilongjiang's dominant secondary and tertiary industries.

Spring wheat is another dominant crop in Heilongjiang Province. The large cultivated area and fertile soil provide natural soil fertility of extreme natural richness and it also is located in the north, so there is a short frost-free season that is suited to the short growing time of spring wheat. We would use our advantages and avoid our disadvantages by developing spring wheat in Heilongjiang Province. According to technical economic data for all of China in 1979, the national average production cost per 100 jin of spring wheat was 13.75 yuan but was only 8.64 yuan in Heilongjiang, so inputs are 37.2 percent below the national average. If we examine levels of development, we see that Heilongjiang plants 31,444,000 mu of spring wheat with total output of 9.02 billion jin, about one-third of total grain output in Heilongjiang. Yields in Heilongjiang average 240 jin per mu, 54 percent higher than in Jilin. This obviously is a substantial advantage of a short frost-free season.

In summary, crop readjustments should be oriented toward Chinese and international markets and must form a foundation for the entire dominant industry system with a focus on key breakthroughs before any appreciable economic, social, or ecological results can be derived. employing a similar principle, we should work hard to develop our special advantages in cash crops, such as flax, beets, sunflowers, and so on, as the focus for readjustments in industrial structures.

III. Work for Protection and Comprehensive Utilization of Agricultural Resources on the Basis of a Need for Ecological Equilibrium

The development of ecological agriculture is an effective route for transforming traditional Chinese agriculture into modern agriculture, and it also is an effective route for rural economic development and protection of the natural environment. Heilongjiang covers a vast area, 680 million mu, one-fourth of it cultivated land, one-half forests and one-fourth for animal husbandry, fishery, and other uses.

Comprehensive development of land resources is of major significance for agricultural development and achieving ecological equilibrium. We should develop economic diversification in rural areas based on the need for thick forests--rich grain--more animals, more fertilizer--more grain.

Heilongjiang has enormous forest resources, with more than 300 million mu of forests, 46 percent of its land area. This includes 240 million mu of forests with a forest vegetation coverage rate of 35.3 percent, which is more than twofold higher than the national average and first place among all provinces and autonomous regions. The major economic danger in forest regions at present is imbalanced cutting and raising. Forests have been seriously damaged through excessive cutting that has sharply reduced the forested area. The amount being cut is not only much larger than the amount being raised but also exceeds our capacity for out-shipment. A policy of reduced cutting should be strictly implemented in forest regions to assure the protection of forest resources and prevent overcutting. On this basis, forest regions should shift direction form a focus on cutting to one on afforestation and economic diversification. Forests with a chain-link pattern of administration and three-dimensional production should be built and attention given to development of diversified production under and in forests. We should achieve the integration of forests and agriculture, forests and animal husbandry, and forests and special products and strive to organize the production of special mountain and local products and valuable animals and plants to continually open up roads to prosperity.

Forest regions should turn their advantages in famous, special, and superior products into commodity economy advantages. An example is Shitouhezi Township in Shangzhi County, which has had a long history of cultivating the "three berries." The township set up a plant for processing fruit juice to deal with problems in shipping out large amounts of fruit when it begins to drop. The area planted in the "three berries" has expanded rapidly, from less than 1,000 mu in 1978 to nearly 10,000 mu at present. Output rose from 150 tons in 1980 to 1,000 tons in 1984. Per capita incomes in the village from sales of fruit alone were almost 100 yuan. Three Berry Liqueur also has become a famous fruit liqueur in China and in foreign countries. Another example is ginseng and the edible fungus Auricularia auricula-judae in Dongning County, watermelon seeds in Ning'an County, persimmion liqueur in Heihe City and so on, all of which have a good reputation in China and foreign countries. In summary, the guiding ideology in readjustments in industrial structures in forest areas is to shift our focus in commodity production to famous, special, and superior products, and to strive to develop economically diverse and multilayer processing to achieve multiple increases in value. Make use of the unique competitive abilities of local special products in commodity markets and improve ecological results as well as social and economic results. Achieve true conversion of unique and special mountain product advantages into commodity economy advantages.

Accelerated development of animal husbandry is one strategic focus of readjustments in industrial structures in rural areas. The Heilongjiang Provincial Government recently determined that 7 pastoral counties, 13 agropastoral counties and some additional agricultural counties have excellent conditions for developing animal husbandry. The development of animal husbandry should be focused on cattle, sheep, pigs, and poultry. Areas with abundant grasslands should focus on cattle and sheep. Agricultural regions should focus on pigs. Moreover, we should strengthen the feed industry and develop compound feeds and full-value feeds and achieve scientific raising. We should strive to develop plants for processing or dairy products, fur, feathers, and meat products to form a complete animal husbandry production system. Anda City, for example, has 2.6 million mu of grasslands and a long history of raising dairy cattle. It currently has 21,177 dairy cattle, the most in any of China's counties and equal to 9 percent of the total in Heilongjiang Province. There is one cow for every 15 rural residents. Total milk output was 35,000 tons in 1985, more than double the figure for 1978. This is 163 jin of milk per person. Anda has produced 13,000 tons of powdered milk and exported more than 2,000 cattle since 1980, and the foreign exchange earned for the state from these two items alone exceeds 29.1 million yuan. It will be possible for Heilongjiang to expand the number of dairy cattle to 2 million head by the year 2000. Moreover, there can be integration with soybean advantages to develop soy and dairy product industries and form a dominant industry.

Heilongjiang is rich in water resources, with more than 24 million mu of bodies of water of various types, but productivity is extremely low. We should make substantial reinforcements in aquacultural production and develop aquatic plants and animals to serve light industry and the people.

In summary, we must achieve a true integration of agriculture, forestry, animal husbandry, and fishery in accordance with the demands of ecological agriculture and use cultivated land, forests, pastoral areas, bodies of water, and buildings for agriculture to achieve full utilization of land resources within an area and convert as much solar energy as possible into bioenergy and provide larger amounts of farm and sideline products for society. We must implement a development strategy that integrates resource cultivation, economic development and environmental beautification.

IV. Establish "Resource Advantage" Township and Town Industry Systems

Township and town industries began developing rather late in Heilongjiang, and they have a weak foundation, few skilled personnel and capital, and equipment shortages. Our local industries cannot follow in the footsteps of advanced provinces, so we must establish a township and town industry system based on our own resource advantages.

The developmental situation in township and town industries throughout China can be divided into several major categories: One is capital advantages. Here, rural industries began rather early, so there is abundant capital. Southern Jiangsu Province is a typical example. The second is technology advantages. These regions generally have fairly developed traditional rural technologies and can depend on enormous specialized markets to develop technical advantage-type township and town enterprises. Wenzhou Prefecture in Zhejiang Province is a representative example of these areas. The third is a resource advantage-type. Another model example is the large number of small coal pits in Shanxi Province's coal industry, which attract capital and labor and promote development in all types of industries in rural areas.

What should be the development strategy for Heilongjiang Province, then? We cannot follow the path of southern Jiangsu, nor can we borrow the example of Wenzhou. The only course is to develop resource advantage-type township and town industries. Examples include the industry for processing food products, the flaxen textile industry and fur and feather light industries that use farm product advantages as raw materials, and there also are various types of lumber product, forest chemistry, and other industries. Some areas have brought in skilled people, advanced technologies and advanced equipment to set up "resource advantage-type" township and town industry systems to improve the competitive abilities of products and transform resource advantages into comomdity economy advantages and promote coordinated development of agriculture, forestry, animal husbandry, sideline production and fishery as well as tertiary industries.

V. Develop Tertiary Industries Centered Around the Market Economy According to the Demand for Commodity Output

Commodities realize their value through exchange. The ability of a product to be sold is the key to whether or not it can become a commodity, which Marx has called a mortal leap. This in essence determines that tertiary industries focused on the development of commodity markets have an important status in readjustments in industrial structures, and it can be said that without markets, there could be no specialized dominant industries. One of the most basic reasons for local economic backwardness and inability to utilize advantages is that attention has not been given to development of a market economy centered on tertiary industries.

In developing tertiary industries, we should pay special attention to strengthening the construction of specialized commodity markets and be concerned with the formation of special small regional centers during development of the commodity economy. Practice has proven that it is quite common for horizontal economic relationships formed around a commodity economy core to become small regional centers. Relationships of exchange at equal value exist among all of the small regions, and they have relationships not only with nearby large cities but also extending into every corner of China or even the world. A specialized commodity market is the king of each specialized commodity center. Another example is the acrylic fiber textile market in Hebei Province's Lixian County. This county has the largest acrylic fiber textile market in China. It has more than

40,000 "specialized buying for resale households" which sell their products all over China. This county sold 20 million pieces of clothing and handled 5,000 tons of acrylic fiber in 1983, accounting for one-fourth of total sales in China and amounting to a gross value of output of 190 million yuan. The formation of this sort of specialized market played a decidedly motivational role in the development of this industry. Lixian County originally had five townships producing acrylic fiber clothing, but the figure has grown now to 21 townships, with 19,675 specialized households, more than 600 associations, and 28 specialized villages. This has caused these industries to grow quickly in size and move from Chinese to foreign markets. The number of personnel involved year round is 45,000 and the figure can reach 85,000 during the slack farming season. Some 40,000 visiting dealers pass through and form a specialized market. Each day, more than 6,000 people attend Beisong Market in Lixian County, including as many as 600 or more visiting dealers from other provinces and autonomous regions, and 100,000 articles of clothing are sold, with a commodity gross value of 400,000 yuan and daily exchanges of 250,000 yuan. There are processing relationships and business dealings with 56 woolen mills in 15 of China's provinces and even the Beijing Synthetic Fiber Plant had to come to this specialized rural market to find buyers for its overstocks of polyvinyl chloride fiber. It is obvious that there are broad prospects for such specialized markets and that this is a picture of a thriving commodity market.

To summarize, the rise of specialized township and village markets to form a core specialized small commodity center is a major characteristic of the development of a comomdity economy. These small specialized production and sales centers are the foundation for city and town development. We must unify planning work in the areas of commerce, services, posts and telecommunications, communications, construction of public facilities, labor services, culture and education, science, technology, and so on to assure the formation of small regional centers and accelerate the pace of rural urbanization.

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CSO: 4007/483

HENAN

VEGETABLE PRODUCTION DISCUSSED

Beijing ZHONGGUO SHANGYE BAO in Chinese 25 Mar 86 p 1

[Article: "Henan Province Vegetable Production Expands and Market Booms; Vegetable Gardens a Success, Baskets of Vegetables Abound"]

[Text] In the more than 1 year since restructuring the vegetable production and marketing system in Henan Province, vegetable output has expanded, the market is thriving, prices have stabilized, and the masses are pleased.

Henan carried out comprehensive restructuring of the vegetable production and marketing system in January 1985, changed from directive-style planning to guidance-style planning, price decontrol, let the vegetable farmers themselves decide which varieties to produce, and to put them on the market whenever and at whatever prices they saw fit. This motivated these farmers to produce more and output expanded quite rapidly. Acreage of vegetable fields increased throughout the year in 18 cities provincewide to 4,205 mu more than 1984 acreage, acreage maintained by the 8 cities under the jurisdiction of the provincial government expanded 110 percent; fine vegetable varieties increased more than 30 percent, and there was a preliminary change to a multilevel production setup where the nearby city suburbs are primary and the mid-distance suburbs and municipally administered counties are supplementary.

Due to expanded production, there has been an increase in the quantity and variety of vegetables on the market, quality has risen significantly, and old, coarse, dirty vegetables have been replaced by fresh, tender, delicate, clean ones; there has been a great increase in edibility, the gap between the peak and off seasons has been narrowed, and fresh vegetables are available daily. There were 20 to 30 varieties of fresh vegetables on the market in the spring of this year, with ample supplies of delicate greens not seen in recent years, such as crowndaisy chrysanthemums, Chinese artichokes, and blanched garlic leaves. Each city opened its gates to the peasants and encouarged them to come and sell their vegetables; circulation through multiple channels made for a booming market. Vegetable prices basically have stabilized; the retail price index provincewide for the year rose only 5.6 percent over the 1984 figure. Income increased for the vegetable growers; according to estimates in the Jinhai district of Zhengzhou City, 1985 per capita income was 420 yuan, which was an increase of 68 yuan over 1984 and

153 yuan over 1983. The cash return of state-operated vegetable companies increased and losses were reduced; provincewide losses in 1985 were more than 2.8 million yuan less than in 1984.

Major empirical observations from restructuring the vegetable production and marketing system in Henan include: 1. To conscientiously organize and bring about production through guidance-style planning, and to do a good job of setting up vegetable gardens, we need to ensure vegetable field acreage, to pay attention to properly managing the production of principal varieties, and to ensure adequate vegetable sources. 2. State-operated vegetable companies must open up operations, actively participate in market regulation, and play a leading role. We must enhance lateral ties, make accurate market forecasts, provide production services, undertake comprehensive operations focusing on vegetables, successfully regulate surpluses and shortages of varieties between peak and off seasons and between regions, and subsidize losses to realize the "four protections and one restraint" (protection against slack seasons, festivals, winter storage, and special requirements, and a restraint on vegetable prices). In order to successfully organize vegetable wholesale transactions and develop forward purchasing trade, 35 wholesale markets have been set up throughout the province, which have enlivened circulation. 3. We correctly applied the law of value, and based on the market situation following restructuring, limited and maintained purchase and sales prices of major varieties during off seasons and winter storage. Floating prices were applied to the state-operated vegetable wholesale market. Prices were freely determined in the agricultural trade markets by giving free play to the role of the market mechanism, which promoted expanded production. 4. The party and government leaders took the task seriously and offered careful guidance, which guaranteed that restructuring the vegetable production and marketing system would be carried out smoothly.

12513/12947
CSO: 4007/415

POLICY ON FERTILIZER PRICES IMPLEMENTED

Beijing ZHONGGUO SHANGYE BAO in Chinese 28 Jun 86 p 1

[Article: "Hunan Conscientiously Implements Policies To Subsidize Lower Prices for the Small-Scale Chemical Fertilizer Industry"]

[Text] After the State Council issued its notice concerning temporary measures to lower prices for the small-scale fertilizer industry, the Hunan Provincial People's Government earnestly implemented the policies and encouraged the peasants' enthusiasm in agriculture, industry and commerce, which has been effective in encouraging the development of agricultural production.

Beginning on 8 March 1986, the highest factory price in the small-scale fertilizer industry and the maximum retail price were set according to the State Council Notice. They studied problems related to subsidies for lower prices, exemption of product taxes for industry, and special policies for "old revolutionary base areas, minority nationality areas, frontier areas, and poor areas." The Hunan Provincial Government decided that financial administrations will provide producing enterprises a subsidy of 15 yuan per ton for ammonium carbon sold after 8 March 1986 that will be calculated monthly by local financial administrations. Because of the losses created by sales at lower prices, the Hunan Province financial administration will provide a subsidy of 10 million yuan to the Hunan Province Supply and Marketing Cooperative for stocks of ammonium carbon in supply and marketing cooperatives prior to the price decrease on 2 March 1986 and it will be distributed to the units under its jurisdiction through examination and approval by the Hunan Province supply and marketing cooperative system. Special policies will be implemented for nonnitrogenous fertilizer plants, counties where sales of ammonium carbon exceed output, and 42 counties in "old revolutionary base areas, minority nationality areas, frontier areas and poor areas." Besides the subsidy of 3.75 yuan per ton provided by Hunan Province financial administrations for each ton of ammonium carbon shipped into the counties, a certain regional price differential will be maintained for the 17 counties with higher original sales prices to encourage administrative initiative.

The implementation and honoring of these policies has greatly motivated enthusiasm in agriculture, industry, and commerce. Total industrial output in Hunan during April 1986 was 219,100 tons of ammonium carbon and 129,100 tons of phosphate fertilizer, up by 18 and 57 percent, respectively, over the monthly plan. After prices for chemical fertilizer from small-scale plants were lowered, the peasants began actively buying fertilizer and made their purchases during a rather concentrated period of time and somewhat ahead of 1985. An example is Gaosha District in Dongkou County, where more than 1,000 peasants from this and neighboring districts lined up in front of raw materials stations to buy ammonium carbon on the first day after the new prices went into effect. Daily sales of ammonium carbon in the region increased from 15 tons to 150 tons. Sales of ammonium carbon in Changde Prefecture totaled 12,327 tons during March 1986, up 33.7 percent over the same period in 1985. A tendency toward monthly increases in ammonium carbon and phosphate fertilizer has appeared throughout Hunan Province. April sales were 489,000 tons of ammonium carbon and 325,000 tons of phosphate fertilizer, up 106 and 98 percent, respectively, over the same period in 1985. The policy of lower prices for the small-scale chemical fertilizer industry has been welcomed by the peasants.

12539/12379
CSO: 4007/474

AGRICULTURE GETS INCREASED FUNDS

Xi'an SHAANXI RIBAO in Chinese 16 Jun 86 p 1

[Article: "A Substantial Increase in Financial Support for Agriculture in Shaanxi Province During 1986"]

[Text] Financial administration departments at all levels in Shaanxi Province have used all possible means to come up with funds to increase investments in agriculture. By the end of May 1986, estimated support for agriculture in Shaanxi reached 316.85 million yuan and the total amount of support for agriculture is up by 27.4 percent over the same period in 1985.

Investments to support agriculture in Shaanxi Province during 1986 have strengthened support for agricultural science and technology. Shaanxi Province financial administrations have provided additional capital for construction of agricultural technology extension networks to be used mainly for technical equipment for grassroots S&T networks, extension of agricultural S&T projects, training intellectual youth in rural areas and popularizing knowledge of agricultural science and technology.

In addition, another focus of capital support for agriculture during 1986 has been assistance for construction of agricultural base areas in Shaanxi. The province has spent 1.2 million yuan to construct apple base areas, double the amount in 1985. Moreover, special loans have been arranged for construction of commodity production base areas for Taichuan cattle, lean pork, freshwater fishery, and other products. Besides this, greater investments have been made in key grain-producing regions. Special capital allocations for grain production development arrangements in 48 primary grain-producing counties totaled 32 million yuan and are being used mainly to develop small-scale farmland water conservancy, extending improved varieties and agricultural S&T, strengthening plant protection and other projects.

12539/12379
CSO: 4007/474

DEVELOPMENT OF FEED INDUSTRY MUST BE SPEEDED UP

Chengdu SICHUAN RIBAO in Chinese 6 Jul 86 p 2

[Article: "Speed Up Development of Sichuan's Feed Industry"]

[Text] Sichuan Province's feed industry has undergone substantial development over the past few years. This has played a major role in expanding the conversion of grain and promoting development of animal husbandry. However, growth in the feed industry comes far from meeting the needs of livestock raising. Pig inventories in Sichuan Province in 1985 exceeded 51 million, but there was less than 20 jin of compound and mixed feeds per pig. There are extreme feed shortages in many areas, especially pellet feeds, premixed feeds, concentrate feeds, and other superior feeds, and they often are unavailable for sale.

What new problems are facing the feed industry at present? One type can be found at the Mianyang Concentrated Feed Plant. This plant is a specialized factory operated jointly by Sichuan Province and Mianyang City that produces 20,000 tons of concentrated feeds each year. Because of prices, raw materials, and other factors, however, the factory cannot achieve the economic results that it should. Comrades in the Sichuan Province Feed Co said that such problems are common in Sichuan's feed industry. There has been a substantial price increase over the past few years for the raw materials used in feeds and product costs have risen. In another area, there is no planning for raw materials sources. Added to the rise in buying prices program due to competition by other provinces coming to Sichuan, the result is a serious shortage of raw materials. In addition, many processing enterprises lack auxillary production facilities, and there is especially a lack of full complements of facilities for warehouses, shipping tools, and so on, and capital shortages have restricted the development of production.

We should take action to explore ways to solve these problems. One method is to make an effort to develop horizontal integration and gradually form an integrated system for feeds, livestock raising, processing of animal products, and even food production to make full use of existing foundations in the feed industry and bring about a noticeable increase in results within a fairly short period of time. The Shuangliu County Feed Co now has established direct links with the Shengli Poultry Farm. The company provides the farm with ducklings and feed and the farm in turn signs poultry-raising and feed-supply contracts with specialized raising households. The poultry farm now has eight specialized households that have contracted to raise 3,300 ducks. In addition, some feed processing plants have established direct integration with raising households or specialized households in rural areas.

The second line of action is to adhere to the spirit of relevant decisions and organize multiple channels for raw materials to transform the passive into the active. To solve the problems of shortages in raw materials, the Sichuan Provincial Government expressly stated during the first half of 1986 that the awards of grain for sales of fattened pigs should be changed to awards of mixed feeds. The state will allocate this grain to feed departments as raw material. All areas should adhere conscientiously to this policy and promote development of the feed industry. Feed departments should work actively to organize purchasing of raw materials. To avoid price rises due to competition from other provinces that come to Sichuan for raw materials, feed departments in Sichuan should unify purchasing prices and work to solve the problem of regional price differentials and price ratios to guarantee that the peasants will not suffer losses when they sell their grain. Patterns and methods employed in purchasing grain can involve exchanges for edible oils, flour, vegetable cakes, and other items, and they also can use negotiated prices for direct purchases.

The third line of action should be to provide policy support. The state has stipulated that newly constructed feed plants should be exempted from income taxes for the first 3 years and that their taxes would be reduced by half for the following 3 years. The Sichuan Provincial Government also has stipulated that for a period of 5 years prior to 1987, the feed industry should be provided with specific subsidies each year by local financial administrations to solve some of the insufficient fixed capital and circulating capital problems of enterprises. These policy measures await implementation to a further degree. Relevant departments should provide preferential supplies of raw materials, energy resources and other items to build favorable conditions for development of the feed industry in Sichuan Province.

12539/12379
CSO: 4007/474

GRAIN PRODUCTION EMPHASIZED

Lhasa XIZANG RIBAO in Chinese 3 Apr 86 p 2

[Article: "Further Emphasize Grain Production"]

[Text] As we got more involved in restructuring the rural economic structure in the autonomous region and further motivated the peasants to produce more, there was an accompanying expansion in agricultural production. Gross output of grain in 1985 topped 1 billion jin, and was the best harvest since 1980. Increasing grain output is a great undertaking: "when there is grain at hand, the mind is calm." A major accomplishment of rural reform in the region is that grain shortages have been eased, and it has provided the material base for expanding agricultural and livestock production for developing economic diversification, and for making a change toward modernization, commercialization, and specialization in agriculture. As such, we must seize upon this opportune time to emphasize grain production even more and to promote the transformation of the industrial structure in the rural pastoral areas.

We must realize, however, that under this favorable situation some comrades, and even individual leading comrades in some localities, pay less attention to grain production than was the case earlier, and have slackened their leadership. One reason is that they feel results come slowly in grain production, the cycle is long, and the return is low; there are quicker results in sideline production, income is greater, and the masses get rich more easily. They are inclined to "emphasize sideline production at the expense of agriculture," and not enough attention is paid to grain production. A second reason is that they feel grain production in the region is already about right, that there basically is enough to eat, and that difficulties would arise in striving for more. A third reason is that individual comrades have not come to realize that a definite potential crisis still exists with respect to grain production in the region.

The existence of these problems illustrates that some comrades have an inadequate understanding of the importance of paying special attention to grain production. Therefore, in order to bring about a continued steady rise in grain output in the region, we must resolve the following issues: First, we must increase our understanding and devote a great deal of attention to grain production. Agriculture is the foundation of the national economy, while grain is the foundation of that foundation. In addition to the fact that people must eat, industry needs agriculture to provide raw materials, especially grain. In the countryside it is as we say, "no wealth without industry" and "no life without commerce," but this by no means implies that we can "emphasize industry at the expense of agriculture" or "abandon agriculture in favor of commerce," foremost, rather, is that "stability comes through agriculture." Nothing can be accomplished without grain. The purpose of restructuring the rural economic system is comprehensive development of the rural economy in a benign cycle. Under no circumstances should we open up new industrial or commercial zones in the rural areas; on the contrary, we should create large, advanced agricultural districts, employ advanced science and technology and industrialized methods, and produce large quantities of farm products. If the PRC depends on imports for most of its grain, and if our autonomous region relies on shipping in the larger part of the grain it needs, the foundations will be shaken; if we lose our support, there will be no question of setting up other enterprises. At a time now when the pattern of agriculture in the region is in the process of changing from a natural economy to a commercial economy and we are converting from traditional to modern agriculture, we must further correct the economic status of farming to guarantee its sustained, steady expansion. The agriculture we are speaking of here does not refer to grain production alone, rather, it means agriculture in general. Grain, however, is a major component of agriculture, and is a significant and irreplaceable product affecting the national economy and the standard of living. The reason we engage in sideline industry and develop a diversified economy is the relatively low return from grain production; income can be supplemented through developing economic diversification. Employing the necessary social regulatory measures to protect the economic interests of the grain farmers does not require them to abandon grain production; still less does their engaging in trade and sideline industry require reverting to "grain as the key link." On the contrary, it requires us to have a correct understanding of developing a diversified economy. In readjusting the production structure to handle correctly the relation between grain production and economic diversification, we cannot emphasize one at the expense of the other; we must reach the point where they help each other advance, a benigh cycle, and overall development is achieved. Under no circumstances may the leadership at any level lower its guard with respect to grain production, or relax its attention to grain as a result of last year's bumper harvest; nor may it neglect investment in agriculture simply because the grain production cycle is long and results are slow in coming, and even less may it shake the status of agriculture as foundation just because the proportion of income from economic diversification has increased. We must by every means possible motivate the peasants to produce grain, and as for the few districts where "sideline production is emphasized over agriculture," we must correctly readjust the industrial structure in accordance with specific conditions, concrete analysis, and overall planning. Provided there is absolutely no slacking off on grain production, we must capitalize on the strengths of a given locality, actively develop economic diversification, and strive for all-round expansion to make the peasants prosperous as quickly as possible.

Second, we must adopt realistic measures, and work hard for steady increases in grain output. There are quite a few natural conditions which restrict grain production in the autonomous region, so it cannot be said there are no difficulties to increasing output. Does that mean, therefore, that we are at a loss? We feel that so long as we work hard to improve production conditions, and put more into the land, the potential is there to increase yields of grain per unit area, and it is possible to realize steady increases in grain output. Based on the reality of the autonomous region, major ways to improve conditions for production are to raise the productivity of the land and to pay special attention to capital construction of fields centering on water conservancy projects. We must further readjust the internal structure of the plant growing industry, expand acreage devoted to crops which nurture the soil, carry on crop rotation, and allow the land to lie fallow after cropping. We must make better use of sources of manure, accumulate large quantities of farmyard manure, increase the organic content of the soil, and foster soil fertility; at the same time, we must increase the use of chemical fertilizers, and apply them scientifically and rationally. We must put more into the land and educate the peasants; not only must we utilize the land, even more must we nurture it, put more into it, and in a determined manner eliminate operations which plunder the land. We must do things in accordance with both natural and economic law, create a benign cycle, coordinate development, and enable the land to provide us with more and more goods through time. We must further popularize and utilize advanced agricultural S&T. As a result of getting a late start in spreading the use of agricultural S&T in the region and having a substandard foundation, and since the peasants' educational level and capacity for intellectual investment are low, and due to the reality that traditional agriculture still is dominant, we must actively carry out reform of agricultural techniques step by step in a planned way, start with what is easy and work toward the more difficult, from lower levels to higher levels, from the simple to the complex, and gradually popularize their use. We can neither overstep reality nor bog down; we need more guidance, and more trials and demonstrations, so the masses can see and understand what is going on, and so we can gradually lead the masses to study science and apply it, which will facilitate establishing a new material and technological base for agriculture in the autonomous region.

Third, we must enhance leadership with respect to agricultural production. Strengthening leadership is the key to successfully engaging in grain production. The leadership at all levels, in this time of getting deeply involved in rural reform, must conscientiously unify our thinking with that of the central authorities as regards planning for work in the countryside, improve its ways, get deeply involved at the grassroots level, make inquiries and do research, break down its directions into small steps, and resolve problems. It must pay attention to actual conditions and be practical, not boastful. Though not slacking off on grain production in any way, it must stress the key elements, take the whole situation into account and plan accordingly, and guided by the policy of emphasizing livestock production, bring comprehensive development of agriculture, forestry, animal husbandry, sideline industry, and fishery to the autonomous region.

12513/12947
CSO: 4007/415

YUNNAN

TECHNIQUES FOR PRODUCING ALTERNATE LIVESTOCK FEED LOCALLY

Kunming YUNNAN RIBAO in Chinese 22 Apr 86 p 3

[Article by Li Shuqing [2621 2885 3237] and Zhou Xuecao [6650 7185 2347] of the Provincial Livestock and Veterinary Institute: "Stress Feed Resource Development; Scientific Knowledge; Suggestions By Technicians"]

[Text] The grain shortage problem will accompany the entire process of Yunnan Province's modernization and livestock industry expansion. Agricultural districts have large populations, little cultivable land, and high land-use ratios. Further expansion of grain production is limited by land, water, energy, fertilizer, machinery, and other factors. Relying solely on grain and green fodder to expand the livestock industry is very problematic. Hence, a great effort must be made to reduce the grain-to-feed ratio, to develop the favorable conditions of agricultural districts, and fully utilize such byproducts as straw, chaff and peat, and other feeds processed from natural resources. This will make competition over land and fighting over feed unnecessary. Expanding the livestock industry by studying development of food resources in addition to food and commercial products is the path with the most vitality and competitiveness.

Straw and chaff are large masses of organic matter wherein solar energy is stored on earth. According to statistics, a year's energy is regularly stored on the earth in approximately 9.1 billion tons of dry plant matter. A 40-percent edible portion of it is in seed form, approximately 3.6 billion tons; a 60-percent inedible portion of it is primarily in straw, chaff, and other agricultural byproducts, approximately 5.5 billion tons. In addition, there is also a large quantity of wood waste products which is not included in these figures. China's annual straw production is 500 million tons, and Yunnan Province's annual production is nearly 30 billion jin. It is a huge annually renewable natural resource.

Peat is incompletely decomposed plant remains compressed under volcanic ash from 5 to 50 million years. Its principle components are cellulose, semicellulose, wood cellulose, coarse ash, coarse protein matter, and humic acid. Yunnan Province's peat reserves are rich, ranking fourth nationally. Dianchi, Yuxiu, Daba, Tengchong, and elsewhere have an average of over 5 million tons of reserves in peat mines, and the thickness of the mines are in excess of 10 meters. The thickness of the mines reaches 14 meters in

Puning and Kunyang. It is 18 meters at its deepest, a depth of peat mines seldom seen in the world. It is a huge underground resource for solar energy.

To expand Yunnan Province's feed industry, it is first necessary to expand the food resource industry, that is, to produce our own raw materials by using this province's natural resources. Currently, raw materials for Yunnan Province feed factories are mostly bought in from outside provinces and from abroad. For instance, fish meal is bought from Peru, Chile, Ecuador, and China's coastal provinces. Bean cake is bought from Manchuria, and corn and other raw materials are bought from Liaoning, Henan, and other provinces. Not only does this make for a large outflow of Yunnan Province's capital, the instability of raw materials often influences normal production and product quality. Because of this, development of Yunnan Province's own resources is to be a long-term plan.

Study for the utilization of broken down coarse cellulose and recovery of sugar and protein to raise the nutritional value of straw, peat, and so on for use as feed is a major field of study to expand basic natural resources, and is an important avenue for Yunnan Province to develop a source for large quantities of feed. Since 1973, our coordination group has undertaken many tests and much study, and have already successfully developed "hot sprayed feed." It is suitable for use in industrialized production. "Bacterial sugar feed" suits all farm village peasants for use in individual and collective production. Each 100 jin of straw or chaff can take 60 to 100 jin of food bacteria, or 70 jin of bacteria sugar. This invention has already been included in "The Road to Prosperity" [Zhi fu zhi lu] and other books, has also yielded positive results in several provinces, and reaped clear economic benefits. For a variety of reasons, Yunnan Province has not yet been able to expand its use. Attention should be paid to it, and it should be pushed.

13152/12947
CSO: 4007/409

INTEGRATING SCIENTIFIC RESEARCH WITH PRODUCTION DISCUSSED

Kunming YUNNAN RIBAO in Chinese 6 Apr 86 p 2

[Article: "Provincial Academy of Agricultural Sciences Persists in Integrating Scientific Research with Production, Obtains Excellent Results; Agricultural Technology Comprehensive Experimental Districts Open Up Production to Science and Technology"]

[Text] "Integrating the results of science and technology with production have made us aware of the benefits;" this is what the S&T personnel of the Yunnan Academy of Agricultural Sciences tell us. For many years now they have been in touch with the characteristics of the natural resources and agricultural production in the province, and they have devoted major efforts to researching the S&T problems associated with raising the yield, quality, and output value of grain and cash crops; they have set up comprehensive tobacco, sugarcane, and grain experimental and demonstration districts in 11 of the province's counties, which has created the positive experience necessary to direct agricultural production thorugh a reliance on science and technology.

The Yunnan Academy of Agricultural Sciences is the key scientific research organization in the province for the production of the major cash crops, grain, and oil crops. Under the policy that "science and technology must be geared to economic construction," they have proceeded from actual conditions in Yunnan, and proposed the "four focuses" and the "seven enhances" to guide scientific research in agriculture; namely, that it be geared to the mountainous regions, the mid- to low-producing regions, minority nationality regions, and arid regions; where both breeding and cultivation are equally important, enhance cultivation; as for grain and cash crops; as for mountainous regions and flatlands, enhance the mountainous regions; as for individual research and comprehensive research, enhance comprehensive research; as for paddy and dryland crops, enhance dryland crops; as for output and quality, enhance quality; and as for mid-production and pre- and post-production, enhance pre- and post-production. In accordance with these guidelines, they actively selected scientific research problems to tackle, got deeply involved in the first line of production, set up 11 comprehensive testing and demonstration districts, in Kunming, Yuxi, Chuxiong, Zhaotong, Luoping, Ludian, Jianshui, Kaiyuan, Mile, Ruili, and Luliang counties and prefectures, carried out comprehensive experiments on the major grain and cash crops, including flue-cured tobacco, cane sugar, and grain, respectively, as well as on improving the red loam, and have realized results. For scientific research on sugarcane, a key reserach task set by the state--"cultivation techniques for high-yielding, high-sugar dryland sugarcane"--they planted on an experimental basis 34,000 mu of land in Jianshui and Kaiyuan counties; after being checked and accepted by nationwide key task groups and specialists within and outside the province, they have realized the major technical and economic targets, and have achieved initial standardization of cultivation techniques. The expansive red-soiled Gushan Plain in Luliang, listed as a state key task project, was utilized as a comprehensive test district for improvement; it was a demonstration district where many units and many specialists acted in close coordination. After 5 years of major efforts, with flue-cured tobacco as the main crop, there was a yearly increase in income of 702,000 yuan, and a yearly increase in forestry income of 51,000-plus yuan. The yearly output value of agriculture, forestry, and animal husbandry in 1985 increased to 14 million yuan, up from 7.6 million yuan in 1980, which was a 90-percent increase. Through an interim summary inspection and appraisal last year, the popularizing of red soil improvement techniques over a large area brought a State Third-Class Award for Technical Advance. The Zhongxian [0022 4729] improved "Dian Rui [3329 3843] 408," successfully developed in the comprehensive demonstration district, has been listed as a current high-quality, high-yield, and more resistant new grain variety in the PRC with breakthrough potential.

The popularization and application of the results of scientific research in agriculture have created the conditions for the province's being more than self-sufficient in grain and oil crops, and for the large increase in cash crops. The unit area yield of paddy rice in the Menghai County comprehensive testing district in 1980 was only 409 jin, and required the state to ship in more than 8 million jin of grain per year; after 1981, paddy rice output increased yearly, and not only was the county more than self-sufficient in grain, by 1985 it was transferring to the state more than 97 million jin of commercial grain annually as well. Last year, the demonstration areas of the various classes of comprehensive testing districts totaled more than 2 million mu, of which 1 million-plus mu was paddy rice, which increased grain output in excess of 80 million jin, and increased the output value more than 12 million yuan. The other cash crops also brought fine economic return.

12513/12947
CSO: 4007/415

EXAMPLE OF NEW CONTRACT SYSTEM WORKING

OW301156 Beijing XINHUA in English 1108 GMT 30 Aug 86

[Text] Hangzhou, 30 August (XINHUA)--China has been implementing a new contract system in the past two years for state grain purchasing instead of the old mandatory buying.

State grain organizations negotiate contracts with farmers every year for the amount of grain they can supply to the state.

Zhejiang Province in east China has been a good example in the implementation of the new system, said Liu Ziyi, deputy chief of the provincial grain bureau. Last year it successfully met the 2.75 million-ton purchase quota for the year.

"The traditional mandatory system, though once effective, does not suit the growth of a rural commodity economy the government is now encouraging," Liu said.

State organizations set quotas for townships and villages. With the help of township grain stations, villagers' committees calculate the purchase amount for an individual farming household according to the size of its growing area. The amount of grain needed for the family to eat and that for seed and forage are deducted.

The farmer then suggests the amount he can supply for state purchase. After balancing within the village, the villagers' committees sign contracts with the township grain station on behalf of the farmers of the village.

After fulfilling the quota, farmers can sell surplus grain on free markets at higher prices than the contracted price. They can also sell to the state at the free market prices.

In case of natural disasters, the contracted amount of grain can be deducted or totally exempted.

Farmers who sign contracts have priority in applying for low-interest bank loans and buy fertilizer and diesel oil at preferential prices. Village and township industries also subsidize these farming households according to the quota they undertake.

The province purchased a total of 3.35 million tons of grain last year, 2.75 million tons at contracted prices and 600,000 tons at free market prices.

The new system has given incentives to farmers, said Liu. Last year the province harvested 16.2 million tons of grain, the same amount as in the year before but from a paddy field area of 6.9 percent less. It has cut back further on total paddy fields this year, said the grain bureau official, but will harvest more than last year, Liu predicted.

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CSO: 4020/435 END

JPRS-CAG-86-035

15 OCTOBER 1986

China Report

AGRICULTURE

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MEETING GOAL TO INCREASE FARM MACHINE EXPORTS ENCOURAGED

Beijing NONGJIHUA BAO in Chinese 15 Jan 86 p 1

[Interview: "Grasp Well Beginning Steps, Lay Well the Foundation for Realizing Exports Plan of the 7th 5-Year Plan Period"]

[Text] Most recently, the State Council approved and transmitted the report by eight departments of the State Economic Commission on expanding the export of our electrical and mechanical products. At the beginning of the new year, deputy manager Jiang Chengxun [1203 2110 8113] of the China Farm Machine Import and Export Corporation has, in response to our newpaper's request, discussed his reflections and plans in this regard.

[Question] The State Council has most recently approved and transmitted the report by eight departments of the State Planning Commission on expanding the export of our electrical and mechanical products, which clearly points out that the export of our electrical and mechanical products occupies an extraordinarily important spot in the developmental strategy of our economy. On this, what reflections do you have?

[Answer] There is strategic significance in the State Council's approval and transmission of this report insofar as changing the backward state of the structure of our export products and improving the technology of our electrical and mechanical industry and level of its management are concerned.

Farm machine exports are a component part of our electrical and mechanical products exports. Since the Third Plenary Session of the 11th Party Central Committee, they have at one point developed rather fast. During the past 2 or 3 years, because our marketable small-size commodities are not so numerous and the international market was undergoing considerable changes, and because, in addition, our sales efforts were not so vigorous, there has been a tendency of stagnation and vacillation in the volume of our exports. The ratio of our farm machine exports is rather small in the volume of our electrical and mechanical exports; this is not quite in proportion to the existing production scale and capacity of our farm machinery industry. Hence, the vast ranks of the production enterprises and exports departments in our farm machinery industry should seriously study and implement the spirit of the State Council

Document No 128, adopt various effective measures, quickly make a go of our farm machine exporting in order to realize the target of our farm machine export volume reaching $100 million by 1990.

[Question] What plans do you have on realizing the target of our farm machine exporting under the 7th 5-Year Plan?

[Answer]: In order to realize the target of our farm machine export plan under the 7th 5-Year Plan, we shall strive in 1986 to make good beginning steps and we must pay attention to doing the following good jobs:

We must continue to improve the quality of such traditional export products as small generators, power generation assembling units, gears for vessels, and processing machines for agricultural and sideline products so as to consolidate our old market. We must implement as soon as possible our export quality permit system in order to prevent the flow of products of low quality and high price into the international market. We must expand our production capacity for automatic power generation assembling units, powered and broad-margin rotationary hand tractors, and four-wheel driven-wheel tractors. We must earnestly adopt measures, improve our craftsmanship, ameliorate the quality of our painted and electroplated products, so as to change the outlook of our export commodities in the international market.

We must demonstrate the production potential our of farm machinery industry, adopt flexible forms of production and organization, import and produce farm machine products of a lower technology-intensive level discarded by the developed countries but which can still sell on the international market. In the beginning, we may accept first some prototypes or processing of parts and gradually proceed toward the processing of whole machines.
We must work toward attaining international standards and, in response to the different requirements in the international market and improve our products by making them leak-proof, pollution-free, shock-proof, heat resistant, secure, and less noisy.

We must digest advanced technologies we have already imported, and produce as soon as possible advanced products, so that we can create results for our factories ahead of time and also enhance our exports and foreign exchange creation capability for the state.

Pay close attention to international bidding for key construction projects in China, make use of our existing products or produce them jointly with reputable foreign factories and business people in order to participate in such bidding, and make use of time, geography, manpower and various beneficial conditions; so long as we do our work early and carefully, we should enjoy plenty of opportunities to win such bidding.

Once we can handle well the tasks mentioned above, we can not only ensure the fulfillment of targets for farm machine exports for 1986; we can also realize a strong foundation for our goal of quadrupling our farm machine exports during the 7th 5-Year Plan.

[Question] How are we going to mobilize the enthusiasm of enterprises and export departments of our farm machine industry so as to expand the export of our electrical and mechanical products?

[Answer] State Council Document No 128 also provides 10 decisions on expanding the export of our electrical amd mechanical products. Along with launching of these concrete measures for implementing a policy that is designed to support and encourage exports, we shall to a very great extent mobilize the enthusiasm of our farm machine production enterprises and export departments. We must maintain the enthusiasm of the vast ranks of our production enterprises in expanding their exports in a sustained way, coordinate and be consistent with the export departments, straighten out our farm machine exporting system, and establish an exports production system. All of these are very important. We must strive for coordination between industry and trade, and technology and trade, create several export -creating enterprises and expand the number of enterprises with foreign trade autonomy. We must let even more large and medium-size enterprises shoulder export tasks, let even more medium and small-size enterprises step forward to the frontline of foreign trade so that they will form a jointly run multi-level farm machine exporting group, and thereby enhance our capability in competition in the international market. Thus, our farm machine export prospects are bright.

9255
CSO: 4007/262

AGRICULTURAL USES OF FOREIGN CAPITAL DISCUSSED

Beijing JINGJI RIBAO in Chinese 21 May 86 p 2

[Article by Li Baixiang [2621 4102 4382]: "Agricultural Uses for Foreign Capital Now Exist and Are Growing Rapidly"]

[Text] During the Sixth Five-year Plan, China moved from not using to using some foreign capital in agriculture, and uses are now expanding rapidly. The total sum is now nearly 2 billion dollars. There are three major sources of foreign capital used in agriculture. First of all, we use World Bank credit: we have arranged to ameliorate salinity and alkalinity on the North China Plain, organize agricultural education and scientific research, reclaim land for Heilongjiang state farms, renew rubber cultivation in Guangdong, breed and process crop seed, build up forestry, complete facilities and obtain intermediate agricultural credit in Anhui's Pi (Pi He), Shi (Shi He), and Hang (Hangbu He) Irrigation Districts, and so forth, for a total in excess of 700 million dollars. In general, these major projects are all proceeding smoothly. For example, a loan of 60 million dollars has been extended to ameliorate salinity and alkalinity in the Huanghe-Huaihe-Haihe region. Since it was put into effect in 1982 (the project is now essentially complete), controls have begun to show results on 3 million mu of easily waterlogged, easily parched, low-yield land distributed over 3 provinces and 9 counties. Farmland irrigation conditions within the project area are notably improved; soil fertility has increased universally, and unit crop yields and gross yields have risen 10 to 40 percent. Within the project area, township enterprises, county-run industries, and specialized households are more numerous than in non-project areas. The first phase loan of 75.4 million dollars for agricultural education and scientific research has been used primarily to replace instruments and equipment and renew training for talented personnel at the 18 key colleges and scientific research units involving agriculture, animal husbandry, and fishery; forestry; water conservancy; and meteorology. This has brought major instruments and equipment at these units up to the standards of the 1980's, and there are now 400-plus individuals studying for advanced or specialized degrees abroad.

The second source of foreign capital used in agriculture is credit and aid supplied by the FAO, the World Grain Program, the UN Development Program, and the International Agricultural Development Fund. For example, the Hebei

Agricultural Technology Development Project borrowed 25 million dollars to contol salinity and alkalinity on 600,000 mu of land. Hubei's Agricultural Development Project transferred credit from the Agricultural Bank to producers to develop fishery. Six major cities, including Beijing, Shanghai, and Tianjin, received material aid for dairy projects and thus resolved milk supply problems. Impoverished regions--Gansu, Ningxia, and Shaanxi--have also independently made use of internationally organized aid funds to undertake water conservancy, hydroelectric projects, grass cultivation, road repair, afforestation, and other construction to improve agricultural production conditions. All have had good effects.

The third source of foreign capital used in agriculture is bilateral coöperation. Via consultation and mutuality, governments and organizations from several tens of nations have arranged to provide China with loans or gifts. For example, the Jilin Project to Increase Paddy Yield has used grain-yield improvement aid funds provided by the Japanese government to introduce techniques for breeding rice in flats and for transplanting by machine. There are obvious results in increased yields, and the program is worth extending into the cool northern regions of China, where cold damages are severe.

Officials in the departments concerned indicate that during the Seventh Five-year Plan agricultural uses of foreign capital will grow more diverse, more multi-leveled, and more multi-channeled. Cooperative, joint capital, and compensation lease projects will increase as time goes on.

12510
CSO/ 4007/426

DEVELOPMENTS IN STATE FARMS DURING SIXTH 5-YEAR PLAN

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION] in Chinese No 12, 24 Dec 85 pp 1, 29

[Summary by staff reporter: "The Sixth 5-Year Plan Was the Best Period of Development for State Farms and Land Reclamation ; A Discussion on the Good Situation in State Farm and Land Reclamation Reform"]

[Text] The nation's state farm and land reclamation system attained marked results during the Sixth 5-Year Plan. This was because of reforms carried out by the central authorities and the State Council, opening up to the outside world, flexible policies, and three major reforms: contracting property, developing enterprises combining agriculture, industry, and commerce, and the development of family farms among staff and workers. Marked results were attained during the period of the Sixth 5-Year Plan in the economic construction of state farms and land reclamation. During this period the old economic system gave way to a new one and a transition was made from the old economic development model to a new one.

The Economy Developed in a Sustained, Steady, and Coordinated Manner

The gross value of industrial and agricultural output in the nation's state farms and land reclamation system is estimated to be 15.9 billion yuan in 1985, an increase of 60 percent over that of 1980. This rate amounts to an average of 10 percent growth each year during the five years. Industrial output value is estimated to have been 8 billion yuan, doubled that of 1980. The productivity rate of all labor and personnel involved is estimated to have been 3,146 yuan, 55 percent higher than in 1980. The annual average over the five years was 9.2 percent. We have realized increases in both output value and labor productivity. Profit is estimated to have been 700 million yuan and every year of the five years realized a profit. Total profit over the 5 years was 3.3 billion yuan and we saw a fundamental turnaround in the long-term losses that had been the situation previously..

Readjustment in Industrial Structure Has Scored Preliminary Results

State farm and land reclamation enterprises in the various localities have carried out readjustment of the structure of their industries according to 4 different levels: The first level is to break the convention of "taking foodgrain as the key link" within the planting and breeding enterprises and, under the premise of never relaxing foodgrain production, develop economic crops. The second level is to increase the proportions of forestry, animal husbandry, sideline enterprises and fishery respectively within agriculture. The third level is to energetically increase the proportion of industrial output value. The fourth level is to actively develop tertiary industries. The proportions of forestry, animal husbandry, sideline enterprises and fishery were, in 1980, 37.8 percent; by 1985 they had increased to 40 percent. During the 6th 5-Year Plan period, there were cultivated altogether 7.05 million mu of forestry, equivalent to the total area cultivated during the 31-year period prior to 1980; the ratio between industrial output value and agricultural output value was readjusted from 4:6 in 1980 to 5:5 in 1985. This readjustment of the structure of industries has greatly enhanced our economic results; during 1981-1985, profits from the industries alone amounted to 3.1 billion yuan.

Implementation of the Economic Responsibility System Has Mobilized Enthusiasm

After the state farm and land reclamation enterprises started to carry out the contracting-out of their financial affairs work in 1979, all trades and professions have gradually carried out the economic responsibility system with joint contracting for production as its principal form and thus mobilized the enthusiasm of the masses of their staff and workers. Since 1983, they have already established more than 810,000 staff and worker family farms of various types; participating staff and workers have made up more than 80 percent; this has served to change the highly centralized farm-managing model, realize the dual-farm management system of large farms being linked to small ones, and thereby maintain the superiority of uniform management for state farms on the one hand and mobilize the enthusiasm of separate management for family farms. In the Xinjiang reclaimation area, funds raised by family farms in 1984 amounted to 7.54 million yuan. They bought machines and other equipment for themselves, repaired their small-scale irrigation works by themselves, devoted efforts to exploitative production, and succeeded in reclaiming 69,000 mu of barren land, restoring 46,000 mu of abandoned land, and exploiting and utilizing 10,000 mu of water areas. Since the Helongjiang reclaimation area established its family farms, its staff and workers have raised 40 million yuan of capital. Of this half consists of original deposits by the staff and workers. They have altogether equipped themselves with more than 740 tractors, more than 1,970 rubber-tire tractors, 200 harvesters, and more than 430 vehicles.

Enlivening the Economy by Coordinating Domestically and Importing from the Outside

In running its agricultural-industrial-commercial joint enterprises, the state farm and land reclamation system has broken the barriers between regional and departmental ownership, broadly developed economic combinations, and established 16,000 such enterprises. During the 6th 5-Year Plan period, the system has taken advantage of foreign capital and 62 imported technological projects and imported 260 million yuan of foreign capital in foreign currencies. Thus coordinating domestically and importing from the outside have enabled our state farm and land reclamation economy to become enlivened and play an important role in the improvement of our economic results.

A Batch of Core Projects Has Been Constructed

During the 6th 5-Year Plan period, the various reclaiming areas have strategically constructed a batch of core projects and works, newly increased the area of our arable land by 3.5 million mu, enlarged our effective irrigation area by 2.9 million mu, steadily planted 1.08 million mu of rubber, constructed 10,000 kilometers of highways and power transmission-transformation routes respectively, newly built a power station (with 6,000 kilowatts of equipment capacity installed therein), established 16 paper mills, newly built or rebuilt 6 large and medium-size sugar mills, 13 cotton and textile mills, 18 cement plants, and 20 coal mines and thus accumulated considerable stamina for the development of our economy hereafter.

Scientific, Technological and Cultural Enterprises Have Gained Great Development

During the past few years, among achievements of the state farm and land reclamation system that won the state's natural science invention awards was the "Liaoning Reclamation Area No 5" fine rice species suucessfully transferred north and cultivated there. Scientific and technological achievements promoted and applied by the various reclamation areas have numbered more than 1,000. The output value increase won by the application of these scientific and technological achievements made up more than 20 percent of the overall output value. Various vocational institutions of higher learning within the system have developed to 12; and secondary colleges, 20. During the past 4 years they have trained 7,000 graduates from college and secondary institutions, with cadres of various levels and categories participating in such training making up 58 percent of the total.

Level of Living Conditions of Staff and Workers Has Greatly Improved

Along with the development of our production and improvement of our economic results, the living conditions of staff and workers of the agricultural and land reclamation enterprises have likewise greatly improved; the annual average income of each staff member or worker has increased from the 640 yuan of 1980 to the 800 yuan of 1985, an increase of 25 percent. During 1981-1984, newly built staff and worker dormitories amounted to 14.18 million square meters, with per person average housing space reaching 7 square meters.

9255
CSO:4007/262

PEASANT NET INCOME REPORTED FOR 1985

Beijing [JINGJI RIBAO] in Chinese 29 Apr 86 p 1

[Article by Long Chun [7893 2504]: "Average Net Income for Chinese Peasants in 1985 Was Nearly 400 Yuan, Up 11.9 Percent Over 1984; The Degree of Discrepancy Between the East, the Interior, and the West Is Shrinking"]

[Text] The State Statistics Bureau's general rural sampling survey team surveyed over 66,600 rural households in 29 provinces, autonomous regions, and municipalities. This sampling revealed that except for a slight decline in average net income in the three northeastern provinces hit by severe natural disasters, there was in 1975, a general increase nationwide in average net income among peasants. The national average net peasant income reached 397 yuan 6 jiao, up 11.9 percent over 1984. The degree of discrepancy between average net peasant incomes in the eastern, western, and central sections of the country, three different economic zones, is now shrinking.

In 1985 the average net peasant income in the eastern, central, and western economic zones were 462 yuan 7 jiao, 388 yuan 6 jiao, and 321 yuan 7 jiao, respectively. The major reason for the rather large discrepancy in peasant incomes is that in the eastern region the portions of peasant household income from united collective operations, economic associations, household operations, and other sources are all higher than in the central and western sections of the country. This is primarily reflected as follows:

In the eastern section the countryside is close to medium and large cities, transportation is well developed, information is readily available, the level of cultural and scientific technology is quite high, and township enterprises grow rapidly. In 1985 in eastern region households an average of 5 out of every 100 residents participated in township enterprise production. The average income accruing directly to peasants engaged in township enterprises was 38 yuan, which is 1.1 times higher than the national average, 3.3 times higher than in the central section of the country, and 7 times higher than in the western region. Township enterprises have already become a major source of peasant income.

In the eastern zone commodity production managed by peasant households has grown rapidly.

In the eastern region the level of development in peasant household-operated secondary and tertiary industries is higher than in the central area or the western region. In the eastern economic zone, income to peasant households engaged in household industry, construction, transportation, commercial food services, service work, and other secondary and tertiary industries averages 88 yuan 1 jiao per person, accounting for 17.7 percent of household income. Income to peasant households operating secondary and tertiary industries averages 62 yuan 6 jiao per person in the central region, or 13.1 percent of household income, and 57 yuan 4 jiao per person in the western region, or 14.5 percent of household income.

In recent years the pace of rural economic growth has accelerated in the western region: in 1985 peasant income there rose faster than it did in the eastern region. The central section of the country is in a transitional zone, and its rate of increase in peasant income lies between the other two. An overall survey shows that the degree of discrepancy between peasant income levels in these three economic zones is on a declining trend. Survey data indicates that since 1984 the average net peasant income in the western economic zone has risen 14.9 percent, in the central section it has risen 9.5 percent, and in the eastern zone it has grown 9.4 percent. The rate of increase is notably higher in the western region than in the eastern or central regions.

The reduced degree of discrepancy between peasant incomes in different economic zones is of major political and economic significance. It indicates that satisfactory momentum has appeared in the Chinese rural economy, advancing from the eastern region to the central and western regions, so that the individual economic zones are developing together.

12510
CSO: 4007/426

GROWTH OF RURAL TERTIARY INDUSTRIES DISCUSSED

Beijing JINGJI RIBAO in Chinese 30 May 86 p 3

[Article: "Rural Tertiary Industries Develop Rapidly in China"]

[Text] Recently, the State Statistics Bureau's general rural sampling team conducted a rural economic survey in 1,927 townships throughout 577 counties in 22 provinces, cities, and autonomous regions. The survey indicated that rural teriary industry developed rapidly in 1985. On average, each township has 29.3 tertiary industries, including communications and transport industries, commercial food services and food storage operations, neighborhood services, educational, cultural, and arts facilities, health and sports facilities, social welfare services, and others, operated in each township. Chief among these, 18.7 units are run by peasant households, 7 units are run by townships, 2.4 are run by primary-level villages, 0.2 are run by small groups of villagers, 0.7 are run by new economic organizations, and 0.3 are run by party and government departments and mass organizations. Personnel engaged in tertiary industries account for 13.4 percent of the total township labor force surveyed. There are an average 1.6 personnel per unit and each unit possesses fixed assets with an average original value of 3,651 yuan. The major features of development in rural teriatry industry are as follows:

The Development Trend Is Toward Multi-level, Diverse Industries

Social and economic services in the countryside have received attention from all sides. A gratifying trend has developed toward multi-level initiation of tertiary industries, involving townships, villages, groups, new economic associations, and peasant households with party and government departments and mass organizations. From the perspective of the composition of trades within tertiary industry, there are diverse kinds. In average township tertiary industries are comprised of 37.8 percent communications, transportation, postal, and telecommunications services; 27.3 percent food services and grain storage facilities; 12.1 percent neighborhood services; 9.5 percent cultural, educational, and arts facilities; 7.9 percent health, sports, and social welfare facilities; and 5.4 percent other institutions.

Tertiary Industries Run by Peasant Households Have Become a Major Component

Tertiary industries run by peasant households constitute 95.9 percent of all rural tertiary industries, and they account for 88.4 percent of the personnel, 85.3 percent of the original fixed asset value, 87.4 percent of the income, 91.4 percent of the employee remuneration, and 90.1 percent of the state tax payments for all rural tertiary industries.

Circulation and Service Fields Dominate

In the average township, communications, transportation, postal, and telecommunications services on the one hand, and commercial food services and grain storage facilities on the other hand, respectively account for 47.4 percent and 26.4 percent of all tertiary industries. Within tertiary industries they respectively account for 41.7 and 28.5 percent of all personnel, 76.3 and 10.6 percent of all fixed assets, 55.8 and 29.9 percent of gross income, 59.2 and 23.2 percent of employee remuneration, and 63 and 25.5 percent of tax payments. In tertiary industrial services, communications, transportation, postal, and telecommunications services earn the highest incomes: in the average township the net income per capita therein is 40.2 percent higher and state tax payment is 50.8 percent higher than in tertiary industry as a whole.

Right now, the kinds of rural tertiary industry are not developing evenly everywhere and do not meet social service needs. In many localities it is still difficult to get a ride, transport freight, get into school, see a doctor, or be hospitalized. Scientific and technical advice is also limited. These are all problems that remain to be resolved in the future development of rural tertiary industries.

12510
CSO: 4007/426

REFORMS IN RURAL LAND OWNERSHIP PROPOSED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 4, 23 Apr 86 pp 26-28

[Article by Li Qingzeng [2621 1987 2582], Chinese Academy of Social Sciences Rural Development Institute: "A Discussion on Reforming the Structure of Rural Land Ownership in China"]

[Text] Following the implementation of assorted contract systems in the countryside, changes in the rural ownership system are also intensifying day by day. The collective economy, particularly growth in the proportion of individual economy, is the primary component of these changes, and this has allowed multi-level development to emerge in the rural ownership structure. Right now, the objective reality of rural economic growth has raised further questions that require us to make theoretical responses and provide practical solutions. One of these questions concerns reform in the land ownership structure.

I. After the output-related system of contracted responsibility was put into effect major changes occurred in rural land relationships.

A split occurred between land ownership rights and land use rights. According to statistics, under various output-related systems of contracted responsibility 99 percent of all teams nationwide and 96.9 percent of all rural households are contracting to complete large-scale tasks. A trend of collective ownership and separate household management has emerged. In those impoverished communes and brigades that originally had nothing to hand over to higher authorities and no accumulated funds, after separation into household management a farmer's income from managing the land is still entirely his own gain. There, collective land ownership is merely a leftover empty shell. Economically there is no way collective land ownership can be realized there in practical terms, and all they have is a fixed legal symbol: peasants are not permitted to buy or sell land. Furthermore, following the emergence of compensatory contract transfer on land, when a peasant becomes a de facto land owner he can aquire a contractor's fee. Land ownership rights are realized through the peasant.

II. In most communes and teams in the Chinese countryside, out of income from land management the peasant must not only maintain himself, but also deliver a portion to the state and the collective.

Here, though land ownership rights have become an economic reality, land ownership rights and land use rights have not been completely separated. However, fundamental changes are also now occurring in this situation.

III. Previously, the state carried out policies assigning state procurement quotas for grain and other major farm and sideline products. Under those circumstances the peasants had to rely on contracts to sell agricultural and sideline products to the state.

This peasant obligation to the state and collective is in reality the economic realization of land ownership rights. And now, reforms are being instituted in state policies on farm and sideline product procurement: assigned state procurement quotas are being changed into fixed contract purchasing. Thus, rural households are no longer responsible for completing the task for the unit issuing the contract, rather they sign purchase and sales contracts directly with the food sector and other commercial sectors. This is an ordinary business contract--a kind of economic deal between commercial producers--and there is nothing in it that affects land ownership rights. That is to say, the degree of separation between land ownership rights and land use rights is growing larger and larger.

IV. As the degree of separation between "the two rights" intensifies, a series of disadvantages accrues.

Looking at the owner's position, land management grows more slipshod as time goes on, an enormous quantity of arable land is occupied for other uses, and land fertility declines. From the user's point of view, the low initiative for land investment adversely affects benefits of scale accruing to the land manager. Now, although we have adopted certain measures to reverse the above situation (such as lengthening the land contract period and permitting land contract transfers, as well as adopting some corresponding administrative measures to tighten controls on occupations of arable land for other uses), results have been less than ideal. Under these circumstances, some comrades advocate adopting a land rental system--changing the de facto free use of land under the contract system into a rental system that charges a fee for land use. They feel that this method would both strengthen socialist public ownership and enable us to surmount the above-mentioned disadvantages. Of course a fee for land use will really put pressure on producers, and this kind of pressure can also be turned into a motive force for farmers. However, in reality the vast majority of farmers in China cannot offer any rent. People spend all day farming the land and everything they earn only maintains their subsistence. In their point of view we cannot find any better employment situation than what they have now. Since the majority of land cannot furnish rent, what use is there in talking about a rental system?

Other comrades advocate evaluating land in monetary terms or returning it to the households without charge. They feel that returning land to the households would reunite land ownership rights and land use rights and thus avoid the occurrence of the trend mentioned above. Of course, Marxism does not completely reject private land ownership. Particularly in small agricultural nations, after the proletariat seizes power private land ownership and usage can be entirely permitted. We can see this view in "The Problems of the French and German Peasantry." Even in Soviet Russian practice we can also observe that in the few years after land nationalization was declared private buying and selling of land was again permitted. This constitutes de facto recognition of peasant land ownership rights. However, we sould also be aware that, in the final analysis, permitting private land ownership is an interim measure. China is a socialist nation and has undergone 30-plus years of socialist construction. The collective economy in many localities remains very powerful: this bears practical testimony to the validity of collective ownership of rural land and other principal means of production in China. Consequently, from either a theoretical or a practical standpoint, private ownership of all land will not work.

Naturally, in dealing with land problems there are also some other opinions. One, for example, suggests we carry out land nationalization and permit peasants to freely buy or sell any increment in land fertility when transferring land management rights. However, neither land nationalization nor commercialization of land management can fundamentally resolve the above problems. Where, then, lies the answer?

V. I feel that the answer lies in readjusting the current structure of land ownership: given that we preserve state and collective land ownership, we should acknowledge individual peasant ownership of some land.

Specifically, none of the land ownership rights clearly under state control would change, but land originally turned over to the collectives would be divided into three parts: public land (including land occupied by village buildings, roads, and water conservancy facilities), wasteland (all land uncultivated prior to the institution of contract systems), and cultivated land. The two former types of land would remain under collective ownership and readjustments would involve only cultivated land. Cultivated land could also be divided into two parts: grain-ration land would largely return to peasant ownership (I call these private fields for short), and land under the reponsibility system would remain in collective control (I call these public fields for short). Through readjustment, the unitary system of collective rural land ownership would become a bi-level system of collective and individual land ownership (called the revised land system for short).

VI. Obvious social results and direct economic benefits are inherent in the revised land system:

1. It is conducive to improvement in soil fertility. Peasants consciously make land investments on private fields; simultaneously, because bidding is invited on large plots of public land it is convenient for land supervision and management. In addition, applying rewards and penalties and implementing auxilliary measures for increases and decreases in soil fertility will permit general controls on predatory management practices.

2. It is conducive to the accrual of benefits of scale in land management. The rental of large plots of public land is itself conducive to bringing about benefits of scale. Limited sales, rentals, or transfers of private fields can also progressively concentrate the land in the hands of farming experts. However, it must be pointed out that due to several factors (the socialist system, the traditional mentality of the peasantry, the scattered distribution of private fields, and so forth) this concentration will not occur rapidly.

3. It is conducive to gaining even more agricultural products. The revised land system ensures collective ownership of public fields and also in practice provides a reliable foundation for rural commodity production. Furthermore, in the wake of improved production results on public fields, the agricultural and sideline products the state obtains through various channels increase as time goes on and there is no way they can decline. In addition, under intensive farming by peasants, private fields can also supply more and more commodities over time. This, then, promotes growth in rural commodity production and accelerates the transformation of the natural economy into a commodity economy.

4. The revised land system cannot damage consolidation in the socialist public ownership system. State ownership rights would not change and the collectives would retain their former control of publicly used land, wasteland, and fields under the responsibility system. Preservation of these two features also essentially ensures socialist public ownership of land as a means of production. Peasants would own only former grain-ration fields. In localities where the land produces a relative abundance, the land area owned by peasants would be extremely small and under most circumstances would include only low-grade cultivated land. (This low-grade land is not the same as the concept delineated in Marx' theory of ground rent: in Marx' theory low-grade land is still used for commodity production. Under the effects of the law of average profit, through commodity sales the farmers must not only be able to pay the workers' wages, they must simultaneously acquire for themselves an average profit. The low-grade land I refer to can only maintain the farmers' subsistence.) Furthermore, the establishment of a socialist public ownership system is not a goal, rather it is a means of developing a socialist commodity economy. If these lands, which could not originally supply commodities but could only maintain the farmers' own consumption, were to be withdrawn from the "ranks" of socialist public ownership, not only would no damage be done to the growth of the socialist economy, but in fact that growth might be accelerated. Therefore, why must we hold back these lands in their hollow original form? If we say that through the revised land system the relations of production will better meet the needs of growth in the forces of production, then we can say that the revised land system not only will not damage the consolidation of socialist public ownership, it will actually further perfect it.

VII. As we have discussed above, the revised land system will involve only cultivated land, and ownership of public land and wasteland will not be modified. Why is this?

First of all, public ownership of roads, water conservancy facilities, and other rural public installations is conducive to the construction of basic rural facilities. This promotes the formation of rural social service systems concerned with production and daily life, and advances the development of a specialized division of labor. Second, land resources--barren hills, wasteland, sand flats, and other land that has yet to be developed and utilized--cover a large area and are widely scattered. Public ownership of these lands is convenient for state management. Furthermore, we can completely arouse peasant initiative for developmental farming by utilizing long-term lease periods, reduced rents and taxes, and other means.

VIII. Work on the revised land system should go through two phases: a phase of testing and perfecting measures, and a phase to disseminate and further perfect them.

In the experimental phase, we must first select certain individual test sites in different types of areas around the country. At each test site work on readjusting the land system must heed the opinions of the many cadres and broad masses, and the initial program must be formulated on an extensive foundation of investigative research. In the process of implementation, we must analyze experiences as we revise specific measures. The work at the various test sites need not be synchronized, and specific measures may differ. We cannot impose arbitrary uniformity.

On the basis of trials, the departments concerned should formulate fundamental measures and policies, and, based on the above attitude and in light of the actual local situation, each locality should correspondingly formulate a specific program to put into effect. In practice, moreover, the program should be constantly perfected. Finally, based on a review experience in the task throughout the country, we should establish a land management system suited to the demands of the new situation and perfect corresponding land management mechanisms.

12510
CSO: 4007/425

GROWTH IN RURAL COMMODITY ECONOMY DISCUSSED

Beijing RENMIN RIBAO in Chinese 6 Jun 86 p 1

[Article: Steady Growth Accompanies Reform in the Rural Commodity Economy: In 1985 the Ratio of Marketable Industrial and Agricultural Products Reached 63.9 Percent; The Number of Products Sold Per Laborer Rose 25.8 Percent Over 1984"]

[Text] Stimulated by reform, the rural commodity economy in China is irreversibly and steadily moving forward. The State Statistics Bureau's most recent statistical data show that in 1985 the rural commodity economy made rapid progress in the wake of major strides in readjusting rural industrial composition and reforming the system of state-assigned procurement quotas for agricultural products. This is primarily manifested in the following areas:

1. The diversified economy has grown and the degree of commercialization has improved. In readjusting industrial composition, we have taken special care to coordinate planting industry relations with forestry, animal husbandry, and fishery, as well as with rural industrial, construction, transport, and commercial services, thus promoting the growth of a diversified economy. Calculated based on comparable prices, in 1985 the gross value of agricultural output (not including industry at or below the village level) rose 3.4 percent over the previous year. Of this, the output value for agricultural crops in the planting industry jumped 25.6 percent over 1984 (this includes oil-bearing crops, fiber crops, leaf tobacco, sugar crops, vegetables, and tea leaves, but excludes grain and cotton, for which production declined substantially). Output values in animal husbandry, fishery, forestry, and sidelines rose 17.2 percent, 18.8 percent, 4.5 percent, and 20.6 percent, respectively. The value of rural industrial output in 1985 rose 50.7 percent over 1984 and increased from 22.9 percent to 27.6 percent of the gross value of social production in the countryside.

In the wake of growth in the diversified economy, relaxed restrictions in the system for buying and selling farm and sideline products, and increases in the number of products offered for sale in the countryside, the percentage of marketable products has improved. After deducting price increase factors, in 1985 total rural sales of farm and sideline products and industrial goods nationwide was up 18.5 percent over the previous year. The ratio of marketable rural industrial and agricultural products rose from 61 percent in

1984 to 63.9 percent in 1985. Of this, the ratio of marketable farm and sideline products increased from 52.7 percent to 53.9 percent and the ratio of marketable industrial goods rose from 83.7 percent to 84.6 percent. Progress in commercialization is obvious.

2. The average number of products supplied to society per rural laborer increased significantly, and labor productivity, which provides a measure of the quantity of commodities, also rose. In 1985 the rural commodity economy grew rather rapidly: the average number of products sold per rural laborer was up 25.8 percent over 1984, and of this, the number of farm and sideline products sold to the state per rural laborer rose 13.2 percent. Excluding grain, which declined somewhat, the major material agricultural goods sold to the state--cooking oil, meat products, egg products, and aquatic products--all increased by a fairly large margin. The quantity of grain sold to the state fell from 652 jin to 582 jin; edible vegetable oil rose from 17.5 jin to 22.2 jin; pork, beef and mutton rose from 41.7 jin to 54.8 jin; fresh eggs increased from 8.2 jin to 10.1 jin; and aquatic products rose from 17.1 jin to 18 jin. The improvement in rural labor productivity, which provides a measure of the quantity of commodities, demonstrates that the Chinese countryside is beginning to depart from traditional agriculture. In addition, new changes have taken place in the countryside in circulation links and among units engaged in commodity production. For example, without exception township and village enterprises have expanded in scale and township-run enterprises have developed rapidly. In 1985 the average start-up value of fixed assets commanded by enterprises at the township and village levels rose 37.1 percent, and the average number of personnel per enterprise grew 13.7 percent. Our capacity for processing farm and sideline products improved and the number of personnel engaged in processing jumped 15.4 percent. Rural transport conditions improved and our freight capacity has increased notably. There are now nearly 600,000 specialized households engaged in transport nationwide, accounting for 1.2 percent of the rural labor force. More than 260,000 trucks and nearly 4 million tractors of every description are owned by individual rural families, representing increases of 41.4 percent and 26.5 percent, respectively, over 1984. Circumstances for developing a commodity economy in the countryside are gradually beginning to take shape and mature.

A look at widely reported circumstances shows that the following problems currently still exist in rural commodity production: The relations of supply and demand are insufficiently coordinated; in particular, demand is growing rather slowly, and this has led to overstocks of some agricultural and sideline products. Slow information, indiscriminate production, and low quality are prominent problems, and there are sectional contradictions of oversupply with respect to demand. Pre-production, production, and post-production services are weak. In some regions there is a fairly serious problem with the commercial sector forcing down grades or prices when procuring agricultural and sideline products. Commodity production is not developing as evenly as it should: in particular, it is developing quite slowly in the extensive, populous mountain regions. This should be a matter of great concern at all levels of leadership.

12510
CSO: 4007/435

FEED SUPPLY, SALE PRICE PROBLEMS AFFECT PIG PRODUCTION

Beijing NONGMIN RIBAO in Chinese 3 Jun 86 p 2

[Unattributed article: "New Problems Appear in Current Pig Production; Feed Prices up, Pork Prices down, and In-Pen Numbers Drop"]

[Text] According to incomplete statistics from the nation's 12 provinces for the first quarter of this year in comparison with the same period for last year, in-pen pig births increased 5.8 percent, pigs leaving the pen increased 10.4 percent, and fertile sows increased 8.4 percent. Aside from the in-pen pigs and fertile sows dropping somewhat in Shandong and Anhui, there were increased in all other provinces. However, at the same time as the increases, some new problems have appeared that merit attention:

1. Feed Decreases and Feed Prices Increase Everywhere

Not a few places have been short of feed since last winter. It has been made known in Zhejiang Province's Jiaxing City that over the past several years 400 million kg in feed grain were stored annually in the city's farm villages, but only 300 million kg were stored last year. The area in spring grains for this year dropped more than 30,000 mu. Also, crops are growing poorly. Once more the trend is for a drop in production. At the same time, in the north food grains other than wheat or rice have fallen; transportation is difficult; the principal raw materials for the supplementary feeds of corn and beans are also insufficient' grain departments have stopped supply of negotiated price feeds; and, there is even insufficient grain for pig raising and quality has dropped. The 1985 dried melon output in Shandong Province's Xintai City in combination with last year's surplus comes to roughly 175 million kg and 135 million kg have already been consumed. There will be a shortfall of 60 million kg in feed before the new sweet potatoes come in.

At present, feed prices are rising everywhere. According to what is known from Jiangsu, Zhejiang, Shandong, Hunan, Anhui, Hebei, Chongqing, and other provinces and provincial cities, corn, wheat, and other unprocessed food grain and cake's lowest market value per kg compared to last year is between 0.08 and 0.10 yuan, the highet per kg is between 0.24 yuan and 0.25 yuan, and the average per kg is between 0.12 yuan and 0.18 yuan. In the most recent survey of market quotations from the province's eight counties and cities undertaken by the Shandong Agricultural Survey Team: corn is 0.44 yuan a kg, a 37.5-percent increase over the same period last year; dried melon is 0.40 yuan a kg, a 66.6 percent increase; wheat bran is 0.34 yuan a kg, a 41.7-percent increase; and, cereal husk is 0.10 yuan a kg, a 42.9-percent increase. Supporting (mixed) feed increases have been even larger.

2. Circulation Channels Are Clogged, Pork Prices Drop

Due to the shortage of feed supplies, peasants are competing with one another in meat nogs in large quantities to minimize individual losses. The number of pigs slaughtered have greatly increased, and the commercial departments have reduced their purchase quantities due to full storage, making for a saturated market and dropping prices. According to the response from Liaoning, Jilin, and Helongjiang Provinces, provincial, municipal, and county cold storage is currently completely filled, and there is no way that more meat can be purchased. The masses have pigs on their hands that are unsalable. The same is true for Zhejiang, Shandong, Jaingsu, and Hubei. Commercial departments have adopted limited purchases and sales by ticket. In some places the "pig ticket" line for June and July was in place by the end of March. The response of peasants everywhere is: "It's hard to sell pigs, it would be better to sell grain."

3. The Number of In-Pen Sows Is Dropping, in Some Places Sows Are Being Slaughtered

Anhui's Fuyang Prefecture currently has 30 to 40 percent fewer sows than last year. Jiangsu's Pei County sterilized or slaughtered 6,469 sows in one quarter for a 30.4 percent drop. Also, 25 litters, for a total of 234 head, were buried alive or drowned. Responses from some places, for instance the Sichuan cities and counties of Chongqing, Neijiang, Weiyuan, and so on indicate that the drop in in-pen pigs is due to the high cost of pig raising and the slow replenishment of pens by pig-raising households, and a contraction of the scale of pig raising. In the Chongqing City survey, there are now many peasant households reducing the number of hear raised after the meat hogs are slaughtered. There are also a few places where replacement pigs are not being bought once the meat hogs are slaughtered, and some places with 20 percent of capacity standing empty. A similar phenomenon also exists in Zhejiang's Jiaxing.

12152/12948
CSO: 4007/451

TRANSFORMATION OF WATER CONSERVANCY ADVOCATED

Beijing JINGJI RIBAO in Chinese 14 Jun 86 pp 1, 2

[Article by Zhang Qiu [1728 1471] "Manage Water Conservancy Well; a Brief Discussion of the Transformation of Water Conservancy"]

[Text] The fundamental task of water conservancy is to prevent disasters and to promote prosperity. It is an important aspect of socialism and one of the important indices of the progress of the development of agriculture and of socialist culture. Consolidating the results of water conservancy construction and further progress in water conservancy is essential to China's "four modernizations."

Thoroughly Transform Water Conservancy

In the 36 years since the founding of the country, the influence of "leftist' ideology in water conservancy, as in other areas, has caused setbacks and errors. Economic benefits were not so very good but the essential point is that great achievements were made in the area of construction. Especially since the 3d Plenum of the 12th CPC Central Committee, by thoroughly implementing the general policy on water conservancy work set forward by Premier Zhao Ziyang of "Strengthen administration and management, stress economic benefits," the economic results of water conservancy work have clearly risen. During the last 2 years, in order to adapt itself to needs arising from the reforms of the national economy, the Ministry of Water Conservancy has further stressed the "Give through service, thoroughly transform water conservancy" reform and stated that "we must concentrate on serving agriculture as our top priority, and expand our services to the national economy and to the development of socialism; from not devoting ourselves adequately to production we must put ourselves onto the track of raising economic results and move from considering just production to taking a wider view in our operations." Water conservancy has entered a new stage in which we will consolidate its foundations and further develop with the emphasis on intensive growth.

Contradictions and Problems

The following contradictions and problems exist in the construction of water conservancy in China:

The first is that the combined productive forces of the natural environment do not coincide with the distribution of water resources. In south China there is much water; in north China there is little water. More than 90 percent of China's cultivated land and forests are concentrated in the northeast and in the south while the west and the north are mostly grassland and wasteland. Industry is principally concentrated in the east and in the south; the value of industrial and of agricultural production in the west is very low.

The second is that droughts and floods are frequent, with floods in the south and droughts in the north. According to statistics between 1950 and 1979 more than 90 percent of China's disasters were caused by floods and drought. An average over many years of about 14 percent of China's cultivable land, or 400 million mu, suffers from drought each year. For almost 10 years none of China's great rivers has had a great flood which engulfed its entire basin and it is easy for people to become complacent in their thinking. Some departments are ignoring flood prevention safety; some people have proposed lowered antiflood standards for riverbeds. Vandalism has lowered the efficiency of water control and even created new problems. The flood last year in the northeast in Liaoning Province is a lesson. As far as drought and water shortages are concerned, since the 1970's drought and shortages of water in the north have already affected the development of agriculture and industry and directly affect the life of the people. The water shortage, along with serious waste of water, have made this problem quite acute. Inefficient agricultural irrigation systems and very low rate of industrial water recycling waste much water. Not only are water conservation measures inadequate but the broad masses have not yet understood the importance of conserving water. This, along with inadequate measures against water pollution, have made the contradiction between supply and demand in districts with water shortages even more acute.

The third problem is that the foundation of water conservancy facilities has not been consolidated. Lack of repairs and aging of water conservancy projects has lowered efficiency and made maintenance very difficult. According to statistics, more than two-thirds of the large reservoirs and three-quarters of the medium and small reservoirs throughout China have project-quality problems of differing degrees of severity. Only 80 percent of the installed electric pumping machinery for wells is in good condition. Of more than 100 million mu in irrigated areas, over 10,000 mu have not reached their planned potential. Most of this involves problems inherited from before 1977. In particular over the last few years, due to lack of repairs and the aging of water conservancy projects, the newly irrigated land created by new water conservancy projects has been less than the area lost by the loss of old projects. According to statistics between 1980 and 1984 China gained 52.71 million mu of newly irrigated land but during the same period lost 51.13 million mu. When we subtract the losses from the gains during this period China just managed to return to the irrigated area of 1978.

Plan Development According to Character.

In order to support the strategic goals for the economic construction of China for the end of the century defined by the Twelfth Congress of the CPC.

The future development of water conservancy should be considered in the light of what the national economy needs for its development. Considering the situation as a whole we should resolve the main contradictions and problems in order to consolidate the foundations of water conservation, develop further water conservation, ensure that measures are suited to local conditions, giving guidance according to the local situation in order to formulate long range and local development strategies appropriate to the development of the national economy as well as to adopt effective general and specific policies and measures.

1. We Should Place the Principal Stress on Specific Characteristics in the Construction of Water Conservancy Facilities.

We should make a comprehensive study of the situation and potential of the thousands of water conservation facilities that have been constructed and repaired since the founding of the country and conscientiously analyze the objective causes for the decline in the efficiency of water conservation projects in recent years. Insufficient investment is certainly the main reason but we should also consider deficiencies in our work. Some facilities have not worked to their full potential because of a combination of aging, lack of repairs, and vandalism. These facilities suffer from safety problems and missing parts; neglecting service to agriculture in recent years; and failure to perform maintenance, replacement of parts, and poor management. Thus, in the short term water conservancy construction should stress above all maintenance, repair, and replacement of missing parts, shifting the emphasis to improving the character of the water conservancy projects. We must shift our emphasis from using water resources to conserving water and seek progress, results, raise the utilization ratio of water resources and the productivity of water by focusing on the character of the water resources. As Premier Zhao Ziyang has said: "We should combine the water conservancy facilities already built with reforms in water consumption. If we manage water facilities well improvements in benefits is very likely; there is great potential."

2. The Stress on Water Conservancy Construction Projects Should Gradually Shift to Central China

The central leadership of the CPC has made these suggestions concerning the Seventh 5-Year Plan: the Chinese economy is divided naturally into eastern, central, and western regions. Development is gradually advancing from east to west. According to China's plan for stressing the development of these three economic regions, as water conservancy construction is consolidated and the foundation of water conservancy in the east is improved, the stress should shift toward the central region. Comparing the population, resources, output, and output value of the 10 provinces and regions of central China with the 11 provinces and municipalities along China's east coast, we find that central China is 80 percent larger than eastern China, the cultivated area is 90 percent greater although the population is just 10 percent greater, water resources are 40 percent greater, food production is just 30 percent grater, and the GVIAO is 30 percent less. We can see that central China has great economic potential, especially in agriculture. However the central region's ability to supply water is just 67 percent of the eastern region's ability. Since the irrigated area in both regions is about equal the present water conservancy facilities of the central region do not meet its needs for economic development.

3. The Principal Direction of Attack on the Contradiction Between Supply and Demand for Water Resources Should Be Conserving Water

Premier Zhao Ziyang has repeatedly stressed: "China is so poor in water resources that both industry and agriculture should conserve water. This should become one of China's important economic strategies." The general policy for developing water resources in this century should rely on advanced science and technology, take conserving water as the main direction in solving the contradiction between water supply and demand. This is especially important where there are water shortages. We should realize that reducing expenditures is in a way developing resources. However, waste of water in industry and agriculture is very great today and so we must adjust the use of water in industry and agriculture. We should reformulate water plans and reassign water use and insert water-use planning into the production plans of industry and agriculture. If we do not make plans to furnish predetermined quantities of water and to formulate measures which reward and penalize consumers according to their water use, water conservation is just empty words.

4. Capital for Constructing Water Conservancy Projects Should Be Collected Through Many Channels; Water Conservancy in the Fields Should Depend Mainly on the Efforts of the Peasants Themselves

China is still a developing socialist country. China lacks the capital for construction; thus the spirit of relying on one's own means needs to be encouraged and put into practice. Improving our use and management of the capital we do have is particularly important. The present piecemeal system of scattering our capital every which way does not help use capital intensively and put money in circulation. Henceforth capital accumulation for water conservancy project construction will be done through multiple channels, multiple methods, and according to the size of the results. Capital accumulation and investment will be done together. People should not depend on the state to increase investment; localities should also increase investment and capital from each source should be combined. Results should be sought and the capital should be used where investment will be rewarded. The construction of water conservancy facilities in the field should depend on the accumulated labor and capital of the peasants themselves.

5. We Should Use Law and Economic Methods To Strengthen Integrated Planning and Management of Water Conservancy Projects

For a long period, China's Ministry of Water Conservation did not establish legislation nor did it have concrete specific policies, thus contradictions over vandalism of facilities, pollution of water supplies, and disputes over water conservancy and water use appeared one after another. We should quickly legislate and use legal and economic means to strengthen the integrated planning and management of water conservancy facilities. Especially when developing, using, and preserving water resources we should perform integrated planning, management and protection by considering the basin, the river system, the weather, surface and underground resources, water quantity and quality, and the water course. We should take an overall view as we carry out the integrated assignment and adjustment of the water-use plans of various departments.

12369/7051
CSO: 4007/458

CHINESE FIRST QUARTER AQUATIC PRODUCTS UP 23.3 PERCENT

Beijing ZHONGGUO SHANGYE BAO in Chinese 12 Jun 86 p 3

[Article by Li Jun [2621 6511]: "Chinese First Quarter Aquatic Production Up 23 Percent Over the Same Period Last Year; Progress in Aquatic Products Catch and Cultivation"]

[Text] Since the first quarter of 1986 overall aquatic products production climbed 23.3 percent over the same period of 1985. The spring and summer seasons of rapid growth have begun and the prospects for production are excellent.

The speed of aquatic products production growth and the simultaneous increases in fish caught at sea and in the cultivation of freshwater and saltwater fish are the most distinctive characteristics of this year's aquatic products production. According to statistics, overall 1986 aquatics products production had reached 1.16 million tons by the end of March, up 23.3 percent from the same period of 1985.

Rarely has the ocean catch increased as quickly in recent years as it did this year in climbing 25.3 percent to 597,000 tons. Aquatic products cultivated in seawater increased 19.6 percent to more than 70,000 tons while those bred in freshwater increased 21.5 percent to 500,000 tons.

The main reason for the increase in the sea catch is that black scraper was the principal species harvested during the winter fishing season. The proportion of black scraper caught between the end of December of last year and the end of March rose more than 20 percent over last year. In Zhejiang Province the black scraper catch rose 55 percent and in Shandong Province it climbed 74 percent.

The saltwater and freshwater pisciculture industries also grew very rapidly. Production units and individuals place a greater stress on products which will be welcomed by the masses and sell well. Production of mussels, which can satisfy the demand of the domestic market as well as be exported for foreign exchange, grew faster than any other saltwater aquaculture product. Laver production, in high demand, also rose rapidly. Freshwater aquaculture production rose in all provinces except for Liaoning and Jilin, where it declined slightly. Considering the overall Chinese situation, further increases in this year's freshwater pisciculture production may be hoped for, if no great natural disasters intervene, in the light of the large increases in new fishponds dug last winter and spring and further improvements in the general level of pisciculture. Fairly large adjustments were made in the proportions of the species bred by increasing the production of high-quality species, such as grass carp, carp, and crucian carp, and by reducing production of species such as silver carp and variegated carp. In areas such as the Heping fish farm in Wuhan City, the proportion of superior species of fish stocked in the fishponds increased 2.5-fold and reached more than 30 percent of gross production. The production of superior species of fish in Jiangsu, Guangdong, and Hunan provinces also rose fairly rapidly.

The spring and summer fishing season began in the middle and end of March with catches mainly of stripers, large yellow croakers, little yellow croakers, and silvery pomfret, beginning in the East China Sea and the South China Sea, and spreading from there to the beginning of the high season which is already upon us. According to reports coming from many areas the catch during this spring and summer season will be about the same as last year.

The market has been very lively due to the increase in aquatic products production in the first quarter due to the increase in supply on the aquatic products market and rapid sales. According to incomplete statistics by the end of March 1986, aquatic products market transactions in the cities and townships increased 57 percent over the same period of 1985. Transactions increased 53 percent in village markets while sales in the state-run aquatic products marketing system climbed 18 percent.

12369/7051
CSO: 4007/458

EXPLOITING CULTIVABLE SEASHORE FOR COASTAL AREA DEVELOPMENT

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL TECHNOLOGY] in Chinese No 3, Mar 86 pp 12-16

[Article by Xiao Peng [5135 7720], Ministry of Agriculture, Animal Husbandry, and Fishery: "Exploit Shallow Seas and Beaches; Promote Expansion of Industrial and Agricultural Trade"]

[Text] I. Adequately Understanding the Significance and Role of Developing the Marine Aquatics Breeding Industry

The situation in 1985 in the rural and fishing areas throughout the country was good. Under the guidance of Central Committee Documents No 1 and No 5, the rural (fishing) areas entered the second stage of reform, readjusting the industrial structure, restructuring the purchasing and selling system, and planning production according to market demand, which brought new vigor to the economy of those areas.

For the past 5 years, gross output of aquatic products has increased an average of 7.6 percent per year. The increased output derived mainly from the aquatics breeding industry. Included in this is the rapid expansion of marine aquatics breeding; the area devoted to marine aquatics breeding in 1985 amounted to 4.4 million mu, which was more than double that of 1980. There has been a change in the aquatics breeding variety mix as well; the proportion of fish, shrimp, and seafood delicacies has increased from 1.7 percent to 9.3 percent, with an especially large expansion in prawn breeding. Many farming and fishing households which have become rich through expanding marine aquatics breeding and production have sprung up throughout the country from north to south. In a number of localities, fishing played an active role in supplementing agriculture and promoting industry; this was an important aspect of readjusting the industrial structure and accelerating the development of the aquatics industry in farming (fishing) villages along the seacoast.

Conditions are good in the PRC for expanding production from marine aquatics breeding, and the potential isgreat. There are large tracts of unexploited water, beaches, and shoals along the seacoast in the various localities; a water area of more than 20 million mu is utilized nationwide for aquatics, while another 16 million mu which could be utilized is not being adequately exploited. In the wake of S&T advances and a strengthened economy, beaches and shallow seas could be used to steadily expand aquatics breeding.

Making ample use of the vast natural resources along the coasts to expand the aquatics breeding industry does not require cultivable land, yet brings a higher economic return. The output value of 1 mu of prawns, reckoned at the common figure of 150 jin per mu and at 6 yuan per jin, would bring 900 yuan, and after deducting costs, would leave a net profit of 400 to 500 yuan. The income from breeding other shellfish and aquatic plants likewise is much greater than from farming. According to 1984 statistics, the nationwide average take of kelp from the sea was 1,265 kg per mu, with an output value of approximately 1,000 yuan; 4,878 kg of mussels per mu, valued at 600 to 800 yuan; and 140 kg of laver per mu, 600 to 700 yuan. One mu of scallops grown for more than 1 year would produce 3,000 kg of shellfish products, valued at 5,000 yuan; the per-mu output value of razor clams, hua [5363] clams, and oysters also is in the 500 to 600 yuan range. Income from breeding such well-known and much sought after fish as the grouper and red porgy is even more impressive. The masses in Guangdong say that raising two groupers is equivalent to raising a hog; growing them in net traps can bring a yearly net income of HK$5,000. It is apparent then that developing these undertakings is an important route to leading the coastal fishermen to prosperity.

People refer to marine aquatic products as "seafood," most of which is delicious, highly nutritious, and very much welcomed by the masses of domestic consumers. In the wake of the rise in the standard of living, and after solving the problem of feeding and clothing the people in the urban and rural areas, there has been a demand for better food and clothing. Although there has been an increase in aquatic products the past few years, the demand is still far from being met. Prawns are principally for export, and are hardly ever found on the domestic market; it would be difficult to purchase them even if one had the money. Some of the other marine aquatic products are also rarely seen on the market, due to limited quantities and assortment, and low quality. Some high-class tourist hotels and restaurants in the large and mid-sized cities still must import fine-quality aquatic products, such as dried scallops, abalone, sea slugs, and others. All these situations can, and should, be resolved by our relying on ourselves to expand production. Through observing foreign markets we know that many of the marine aquatic products are export goods in great demand, and a source of exchange; prawns, crabs, laver, and shellfish bring a high price on these markets. Exporting 1 ton of the finished product made from prawns bred to high standards will bring $10,000 in foreign exchange, which is equivalent to the amount of exchange obtained from exporting 83 tons of corn; 1 ton of average quality prawn products will sell for approximately $7,000. The selling price of purple mussels, which is low domestically, is considerable on the foreign market.

Expanded production is the key to meeting the domestic and foreign market demand. There are 14 open port cities and 4 SEZ's along China's seacoast, and we must make adequate use of this favorable condition, produce more well-known, special, fine-quality products, develop the industrial, agricultural, and trade economy along the coast, use exports to finance, spur on the hinterland, and promote the development of the whole aquatics industry.

In terms of aquatic products themselves, expanding marine aquatics breeding is an important aspect of increasing the output of such products perhaps manyfold. The Central Committee has called for a quadrupling of aquatic product output by the end of the century, and a more than quadrupling of output value; to realize this target, marine breeding must shoulder the burden, especially the output value aspect. In expanding marine breeding, not only can we see to it that the surplus labor in the seacoast districts is given jobs, at the same time we can entice some of the specialized fishermen to leave their boats and take up aquatics breeding. The output value from marine breeding exceeded that of ocean fishing in 11 coastal counties in 1984. This developmental trend aids the rational readjusting of the fishery production structure, reduces the intensity of fishing in the vicinity of the ocean, protects and multiplies resources, and is highly significant in terms of promoting the expansion of the whole aquatic products industry.

II. Fundamental Experiences in Developing Marine Breeding

To summarize, there were four fundamental experiences which enabled us to realize large increases in marine breeding during the period of the Sixth 5-Year Plan:

A. The Power of Relying on Policy: The expanding of shrimp raising is a convincing example; the power of relying on policy is an important reason why, within a short period of 6 years, we now have shrimp where we had none before, and quickly have become a world leader in shrimp raising. We established the China Aquatic Products Breeding Corp. in 1979, organized technical tasks, and employed joint management methods to return export profits to the breeding and production units, which greatly motivated the various districts, sectors, and production units to expand the breeding industry. We entered the second stage of reform in the agricultural (fishing) villages in 1985, eliminated centralized and assigned procurement of aquatic products, and freed prices, which made the masses even more enthusiastic about breeding aquatics. Leting County raised funds in 1985 (one-third each from foreign funds transferred domestically, pooling peasant resources, and bank loans), increased construction of prawn ponds, and in one leap became one of the most advanced counties nationwide. To expand shrimp production in the Hanting district they "did not look to the higher authorities"; they made use of water conservancy practices, brought compensation where there was none before, and relied mainly on the method of allowing labor to buy shares; in the winter of 1984 and spring of 1985, they raised funds totaling more than 6 million yuan, took out 3.7 million yuan in loans, constructed 43 li of surrounding dikes, and income from the shrimp raised in the resulting ponds amounted to 3.87 million yuan.

After the 3d Plenum of the 11th CPC Central Committee, marine breeding gradually came under the production responsibility system, and to date contracting for production responsibility generally has been with households and production groups; there are more than 200,000 marine breeding specialized households and jointly run enterprises nationwide. In addition, the various localities in recent years have formulated policies to encourage all sectors and industries to invest in developing unexploited beaches and waters, to obtain certificates establishing use rights, to refrain from levying taxes for several years on newly developed beaches, shoals, and water areas, and to assign loan funds and materials on a priority basis. They have devoted major efforts to motivating the masses to develop the unexploited beaches and waters. The area devoted to marine breeding in Zhejiang Province increased from 185,000 mu to 380,000 mu over the past 2 years; output nearly doubled from 48,000 tons in 1982 to 90,000 tons. In all areas over the past few years where the policies were correctly implemented, the masses' motivation to produce more was increased and production rose rapidly; in areas where the policies did not take hold, large tracts of unexploited beaches and water remain. This experience is worth summing up well.

B. Relying on S&T Advances: The PRC currently has embarked on breeding and raising large quantities of more than 20 marine product varieties, including fish, shrimp, shellfish, aquatic plants, crabs, and sea slugs. In developing these varieties, breakthroughs in scientific research, advances in S&T, and the mastering of this S&T by the producers have a direct bearing on improvements in the main production links, such as nurturing the young and growing them to maturity, and processing to preserve freshness. Kelp cultivation on rafts, and artificially breeding fry and transferring them to the south in the 1950's, artificially breeding seedlings and nurturing laver in the 1960's, and raising mussels and sea slugs in the 1970's all promoted greatly expanded production. In the 1980's, there has been continued mass production of the young of shrimp and mullet, and breakthroughs have been achieved. This, together with artificial breeding techniques for many varieties of fish, shrimp, crabs, sea slugs, and including scallops introduced from the gulf and oysters from the Pacific Ocean, all are the result of integrating scientific research with production. To date, 35 marine aquatics breeding scientific and technical projects have been commended, of which 13 received awards by the general session of the National Science Conference in 1978, 22 received awards from 1978 to 1985, and the techniques for mass producing the young of prawns entirely by artificial means captured the State First-Class Award for Advances in Science and Technology.

The exploitation of each variety, as well as the increase in output and improved quality, all depended on technical breakthroughs. Breakthroughs in mass producing the young of prawns were a result of the close integration of scientific research with production, and carrying out cooperative S&T projects on a large scale. Not only was the nationwide demand for fry for raising shrimp met in 1985, we released young shrimp of 3 cm and longer for increasing breeding in the harbors and bays as well.

The solution of key technical research problems in recent years for breeding and production of aquatics has directly promoted increased unit yields, made for more intensive and extensive production, and resulted in the appearance of a group of high-yielding marine aquatics breeding types which bring high returns. Through refined techniques for bringing high yields of prawns, each of the provinces now has types which produce through breeding 300 to 400 jin per mu. In 1984, the Zhoushan Aquatics Institute, in a 5.6-mu pond in Putuo County, achieved a per mu yield of 1,330 jin; in 1985, the Nandagang

[0589 1129 3263] farm in Hebei Province, in a 5-mu pond, achieved a per mu yield of 1,290 jin; a 4.8 mu shrimp pond in Lianyugang City realized a per mu yield of 1,343.8 jin, which set a new national record. Shrimp raising in Jiangsu Province's Ganyu County yielded an average of 173.5 jin per mu, and in Hebei Province's Huanghua County yielded an average of 160.8 jin; both of these set new national unit output levels for shrimp raising over a large area. The per-mu yield from shrimp raising nationwide rose from 21.7 jin in 1979 to 80 jin; included in this is a rise in the jointly managed base counties from 34 jin to 98 jin. Although the average level is not yet very high, progress has been quite rapid. Through marine breeding of nuluo luofeiyu [1441 5012 5012 7236 7625], Jiaonan County in Shandong obtained 1,500 jin per mu over a small area; Wendeng and Rongcheng Counties achieved 800 to 1,000 jin per mu over a large area. Raising fish and shrimp together in Qidong County [Jiangsu Province] resulted in a yield of more than 700 jin per mu, and both the fish and the shrimp did well. Per-mu yields of several tens of thousands of jin were realized from breeding groupers in the sea in net traps in places such as Zhuhai and Huiyang Counties and cities in Guangdong Province; the same high yields were achieved by the Dalian City Aquatics Institute in raising rainbow trout and silver salmon in the sea in net traps. Dalian utilized the chambers for growing the young of prawn and marine delicacies to raise luofeiyu, and obtained a yield of 15 jin per cubic meter of water (more than 18,000 jin per mu). Penglai County in Shandong Province has spread the intercropping of shellfish and aquatic plants over a large area; Changdao County has implemented trials dealing with the three-dimensional use of a body of water, raising kelp on the surface layer, mussels and scallops in the middle layers, and increasing the reproduction of sea slugs, abalone, giant algae, and see urchins on the ocean floor; this testing was done to develop new avenues for increasing the economic return from marine aquatics breeding.

The breeding of aquatic plants has been consolidated and expanded as a result of advances in processing technology. Through improved technology the quality of iodine, gum, and alcohol made from kelp is better; the production of packets of brown algae, and "convenience foods" and "health foods" utilizing kelp as raw materials has been given a boost, which has maintained kelp output at record levels in recent years. There have been more and more other products processed from aquatic plants as well; finished products such as packets of salted clarified seaweed from Dalian, and laver from Qidong, Pujiang, Lianjiang, and Pingtan are exported to Japan, Hongkong and areas of Southeast Asia. The agar and qiala [0595 2139] gum produced from jiangli (?) [3068 4539] and kylin in Hainandao is in great demand at home and abroad, which gives impetus to greatly expanded artificial breeding of these source materials.

The S&T level determines breeding and production standards. All areas which pay attention to S&T work achieve breakthroughs and expansion in breeding and production; all areas which do not take S&T work seriously lag behind in breeding and production, and there will be no improvement. This problem should arouse sufficient attention on our part.

C. Paying Attention To Establishing Commercial Bases; Doing a Good Job of Providing Marine Aquatic Services Before and After Production: Constructing commercial bases for marine aquatics breeding was an important project during the Sixth 5-Year Plan. Commercial bases for seafood delicacies, marine fish, and sand and shallow-water shellfish have been set up over the past 5 years. Establishing commercial bases not only has opened up the strengths of the various regions in terms of natural resources, and provided certain products to the large cities and for export, it has provided fry, feed, and technical services to the masses for aquatics breeding as well; in providing demonstrations and guidance, it has promoted the development of marine aquatics breeding along the lines of improved, high-output production, and the immediate results, as well as the social results, have been noteworthy. Aquatics departments at all levels and aquatics breeding corporations in recent years have provided many services before and after production which are related to breeding and production. They have provided services to the producers dealing with such aspects of aquatics breeding as site selection, planning, layout and distribution, supplying fry and feed, product processing and marketing, providing information and consulting services, and organizing technology exchange. They have set up an integrated supply and marketing system encompassing the production, purchasing, processing, and exporting of prawns, which has played an important role in guaranteeing production and raising product standards and quality. Since Shandong's Rushan County established on its own the Aquatics Breeding Corp. and the Technical Services Corp. for breeding aquatics on beaches and shoals, they have provided the young of shellfish and shrimp to the aquatics breeding specialized households and supplied compound feeds, so that now two-thirds of the feed countywide used for raising shrimp is compound feed; as a result, the production and growth of prawns has gone well, and the economic results have been outstanding. The technicians of the service corporation also have gone to the various localities and implemented technology contracting, technical services, and technical consulting, and have been successful with various purchasing and marketing projects; they have been warmly received by the aquatics breeding households, and have been praised by the masses for the "fine logistics" and "fine advice" they have provided.

D. Gaining the Serious Attention of Leaders; Enhancing Mobilization and Organization for Marine Breeding; Helping To Solve Practical Problems: The serious attention of party and government leaders at all levels is the key to promoting various undertakings. Many cities and counties along the seacoast set up leading teams or headquarters for exploiting the beaches and shallow waters, with participation by the principal competent officials, drew up comprehensive programs, studied and implemented specific policies and measures, and enhanced organization and guidance with respect to exploiting the beaches and shoals. Donggou County experienced 30,000 to 40,000 mu increases in area devoted to raising prawns in each of 1984 and 1985. This amounts to one county equaling a province or several provinces with respect to expanded area, principally as a result of leadership, mobilization, and organization by the Donggou County party and government, and through the concerted efforts and industrious spirit of the various concerned sectors and scientific research units in the county dealing with aquatics.

The leaders in many localities still pay attention to drawing on the strengths of a given locality, and formulate policies for expanding aquatics by suiting measures to local conditions. Changdao County is an island county, and as such has traditionally emphasized aquatic products; the county leaders have devoted major efforts to developing "marine agricultural and livestock farms." In recent years, especially, they have emphasized the breeding and production of marine delicacies, and have witnessed great achievements. In that county at the present time, 51 percent of the output value is derived from aquatics breeding, while fishing accounts for 49 percent. Zhangpu County in Fujian Province has studied widely Shan Hai Zhing, has drawn on what the sea has to offer, and has launched the breeding of various varieties of aquatics, such as oysters, marine fishes, and seafood delicacies; it has done a great deal of work aimed at helping the ocean farmers and fishermen along the coast get rich. A good many provincial, prefectural, county, and city governments, as well as concerned sectors, have actively supported marine aquatics breeding through funds, credit, and materials, and have been forceful in promoting expanded production.

III. Marine Aquatics Breeding Must Undergo Greater Expansion

Marine aquatics breeding and production holds great potential, there are many varieties, and the output value and rate of return are high; these are points which need to be emphasized in developing the aquatics industry. There should be an even greater expansion during the period of the Seventh 5-Year Plan. Nationwide marine aquatics breeding targets of the Seventh 5-Year Plan are: gross output totaling 1.2 million tons by 1990, and an annual rate of increase rising to 11.4 percent, up from the 9.4 percent of the preceding 5 years; an average yearly increase in quantity rising to 100,000 tons, up from the 50,000 tons of the preceding 5 years. Gross output value should more than double. The plan calls for the quantity of exports and the resulting exchange by 1990 to be about double the 1985 aquatic products export totals.

In order to realize the program targets of the Seventh 5-Year Plan, and to promote the expansion of the marine aquatics breeding industry, we must pay special attention to the following agenda:

A. Correct Guiding Thought, Clearly Define Points of Emphasis; Surmount Weak Links; Accelerate Development and Use of the Shallow Sea and Beaches: We must pay attention to developing and utilizing unexploited beaches and waters, just as we pay attention to cultivated land, and come up with a strategic plan which would speed up development of the aquatics breeding industry, and which would continue to regulate the farming (fishing) village industry along the coast. From now on, in assessing the true achievements of coastal fishing production, we must examine the development and use of the shallow sea and beaches. In expanding the marine breeding industry, we must continue to implement the production policy of "full utilization of the shallow sea and beaches, reproduction and raising of aquatics by suiting measures to local conditions, all-round development of fish, shrimp, shellfish, and aquatic plants, and comprehensive management of processing, transport, and marketing." During the period of the Seventh 5-Year Plan, we must continue to implement various policies which are effective in expanding marine breeding and production; at the same time, based on new circumstances, we must adapt to the requirements of second-stage rural reform, and research and formulate new policies to accelerate expansion of marine breeding and production.

The policies must start by promoting production, motivating the producers, protecting the legitimate rights and interests of the producers and investors, and correctly handling relationships between the state, collective, and individual. In carrying out present policies, we must further perfect them and make them all-encompassing, to realize their full benefit. Focal points for research are:

1. Continuing to obtain use rights to beaches and water areas, researching and settling problems in determining authority and issuing permits, and mobilizing the various parties to develop the unexploited beaches and waters. Each locality should pay close attention to successfully carrying out the work of determining rights and issuing permits, requiring that such work be totally completed as quickly as possible for the beaches, and setting about determining rights and issuing permits for developing shallow sea aquatics breeding areas.

2. Further perfecting various forms of the system of contracting for joint production, insisting on state management, the collective, and the individual progressing in unison, and encouraging and supporting jointly run entities, specialized households, and individual households to expand the aquatics breeding industry; developing socialized services, especially in districts where production is concentrated, and according to the needs of the producers, and doing a good job of organizing services related to fry, feed, technology, processing, transport, and sales, as well as to credit and materials. We must continuously perfect the cooperative fishing economy and promote expanded commercial production.

3. Expanding channels for the masses to obtain funds, promoting integrated complexes in various forms, attracting foreign capital, and encouraging the concerted development of particular localities, and other parts of the country, within and outside given provinces. Contracts for joint operations and management must receive legal protection, and no sector or unit may take off and act as it pleases; we must conscientiously implement policies which define who invests funds (or labor), who carries on the operations, and who gets the returns.

4. Correctly handling the relationship between distribution of earnings and accumulation, and giving consideration to the interests of the state, the collective, and the individual. Comrade [Hu] Yaobang recently instructed us: "For the most part it has been less than 2 years since the coastal fishing industry has been given a boost. The work of the fishermen is somewhat more arduous than that of the farmers, so the income should be a little more. As such, we must not change our orientation of enlivening [the fishing industry]; it will not do to become infuriated. When the process of becoming prosperous is relatively advanced, it seems we could begin to expand somewhat the amount we set aside for public welfare causes and increase taxes a little." We must conscientiously carry out the spirit of these instructions

of [Hu] Yaobang, and correctly handle this relationship. In making distributions to the producers, at the same time as encouraging labor and bringing prosperity, we must pay attention to guiding them to expand reproduction, to improve production conditions, to increase production and accumulation, to maintain stamina for expanding production, and to enhance aquatics breeding safety.

5. Strengthening management of the products and markets in connection with the new circumstances and new problems which appeared in 1985, after aquatics products prices were set free, and formulating policies which take into account the interests of the producers and consumers, and which aid in expanding exports and creating more foreign exchange. In order to make guiding production easier, to link up production and marketing, and to protect the rational interests of all parties, we must study how to implement a system of contracting for purchases of marine breeding products. Joint agreements which have been signed heretofore for breeding prawns and which have proven unsuitable must be revised and supplemented. We must study and resolve problems in prawn raising pertaining to the export management system, prices, and subsidies for export losses.

B. Enhance S&T Management; Organize S&T Projects; Popularize and Apply the Results and Experiences of Domestic and Foreign Advanced Science and Technology: Persist in science and technology serving production, and a scientific research orientation where research and production are closely integrated. There is a question of proprietary rights of research results; the principal relationship among the sectors which list projects and tasks, which appraise and compare results, and which conduct research should be one of mutual cooperation and mutual support, and must not be simply a monetary relationship.

We feel that the key tasks requiring research and production breakthroughs during the period of the Seventh 5-Year Plan are: 1) Effecting a breakthrough in fry breeding techniques for such marine fishes as mullet, grouper, porgy, yellow croaker, and lefteye flounder,as well as breeding and reproducing such major varieties as juyuanqing [6920 4878 7230] crabs, swimming crabs, abalone, sea slugs, and blood clams, achieving large-batch productivity in fry breeding, and coming up with techniques for increased breeding of the mature animals. 2) Making significant progress in scientific methods of mixing compound feeds, and in feed-processing techniques, for prawns and marine fishes. 3) Summarizing and popularizing the pattern for high output in prawn and marine fish breeding. 4) Making productive breakthroughs in the artificial breeding of striped prawns in the south, and bringing about the maturation of the sex glands of the parent shrimp and hastening the arrival of young to within 1 or 2 years. 5) Continuing to do a good job of introducing, digesting, and absorbing new marine breeding varieties, and improving techniques for increased production of scallops in the seas and bays, and of oysters in the Pacific Ocean. 6) Comprehensively utilizing processing techniques for shellfish and aquatic plants, and manufacturing machinery for gathering, processing, and packaging. 7) Researching the prevention and control of diseases in the main varieties of fish, shrimp, shellfish, and aquatic plants raised. 8) Expanding and circulating reproduction techniques for fish, shrimp, crabs, and marine delicacies.

Marine breeding technical services and the popularization system must be set up first at the provincial level. We must encourage transprovincial and transregional technical contracting and technical services, and effect cooperation between north and south, and mutual aid and exchange. We must enhance technical training for specialized groups and specialized households, continue to institute separate training classes for each level, respectively, and utilize up-to-date science and technology to guide production.

C. Pay Attention To Constructing Complete Systems for Fry Stock, Feeds, and Water, and To Establishing Processing Facilities; Effect Synchronous and Coordinated Expansion of Breeding and Production: Water, stock, and feed are three major factors influencing breeding for high output and superior quality; complete processing units also guarantee bumper output and harvests, and high return from aquatics breeding. We should assimilate the experiences and training of the past several years, pay special attention to the importance of setting up complete units, and rigorously implement what is required by science to guarantee breeding and production.

Simultaneous with formulating development progrms for the various localities, we must consider distribution and scale when constructing complete units. In terms of the development program of the Seventh 5-Year Plan, there still is a great shortage of fry stock; we are far from being able to fill the demand for increased breeding of shrimp fry in the south, and for fry production of other types such as seafood delicacies, fish, and beach shellfish, so we must emphasize expansion. In addition, we must emphasize as key projects construction of feed factories, and construction of resource bases for feeds which go into compound feeds; given improved scientific prescription standards and processing techniques, we must effect integration of large, mid-sized, and small enterprises with emphasis on rational distribution of the medium- and small-scale enterprises. We must promote the opening up of feed sources for the aquatics breeding farms and integrated complexes, and build mixed feed shops. In fish and shrimp raising, growth will be rapid only when the water quality is good; to improve the feed conversion ratio we must enhance construction of complete water systems, and bring about breeding in flowing water and deep water. Processing capacity must be adapted to production, and in addition to freezing fish, shrimp, and scallops, we must successfully engage in various types of chemical processing to enhance the variety and color of commercial products.

12513/9365
CSO: 4007/416

EXPERTS SAY HUANG HE WILL NOT CHANGE COURSE

OW161228 Beijing XINHUA in English 1105 GMT 16 Sep 86

[Text] Zhengzhou, September 16 (XINHUA)--Chinese experts have confidently predicted that the Yellow River will not change its course in the next century as it repeatedly did in history.

In making the prediction, they based themselves on China's success in harnassing the river through 40 years' work to raise and strengthen the dykes on the lower reaches while building flood-prevention projects on its upper and middle reaches.

In addition, people have found ways of controlling soil erosion on the river's upper reaches through planting trees and grass, according to officials at the Zhengzhou-based Yellow River water conservation committee.

Known as "China's sorrow," the river changed its course 26 times in the 2,400 years leading up to the end of this century. And in a 70 year-period prior to 1946, it breached its dikes 50 times, causing untold sufferings to millions of people.

The river, running 5,464 kilometers across Northern China, carries 1.5 billion tons of silt downstream every year, raising the river bed of some sections meters above the land level beyond the dikes.

Over the past 40 years, however, peasants in Henan and Shandong Provinces have raised the 1,400-km dikes in the lower section of the river by two to six meters.

The 174 hydroelectric power stations built so far along the river store 31.5 billion cubic meters of water--60 percent of the river's annual flow.

Two flood retarding basins in Henan and Shandong Provinces, on the lower reaches of the river, are capable of storing five billion cubic meters of water and are used to help retain a rare flow of 22,000 cubic meters per second.

Moreover, soil erosion on 70,000 sq km of land on the loess highlands has been brought under control since 1979. Peasants there are being encouraged to terrace the fields and plant grass and trees to prevent soil from being washed away into the river.

The dike raising and reinforcing program will continue, the committee officials said. Meanwhile, more reservoirs will be built on the upper reaches of the river for flood diversion and irrigation.

The water channels near the mouth of the river will be dredged to facilitate the flow of water into the sea, they added.

Some foreign water conservation experts have said a change in the course of the Yellow River will be inevitable, and even advised that work begin on dredging a new course for the river.

While insisting that the river would be safe in about 100 years from now, Chinese experts are of the opinion that the proposal from their foreign counterparts is not feasible.

Dredging a new course for the river would destroy the present irrigation, drainage and transport system on 300,000 sq km of land on the lower reaches of the river and involve moving at least 2.5 million people, said the officials at the committee.

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INVESTMENT INCREASES, PRODUCTION CHANGES NOTED

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 5, 5 May 86 p 33

[Article provided by the Ministry of Agriculture, Animal Husbandry, and Fishery's Agriculture Bureau Information Office: "Increase Agricultural Investment, Improve Production Conditions"]

[Text] I. Shaanxi

It has been resolved to increase agricultural investment by 100 million yuan from 1986 through 1988, restoring it to its maximum historic level. In those years the province, prefectures, and counties will draw an additional 10 percent from financial resources for use in agriculture. The province will set aside the following: 1 million yuan to restore the system of scientific and technical agricultural services, 2 million yuan and 500 tons of gasoline to control blight and pest damages in wheat fields, 40 million yuan for fertilizer price decreases and tax exemptions, and 14 million yuan to aid production development in poor mountain regions. Shaanxi's poor mountain regions will be exempted from 10 million yuan worth of agricultural taxes and will receive 5 million yuan in funds to aid production development. Ten million yuan drawn from civil administration funds will be pooled to develop production in 20 impoverished mountain counties. Of the 20 million yuan raised in Shaanxi's mountain regions, 4 million yuan will be set aside from provincial coffers to aid poor mountain regions.

II. Guizhou

In 1986 the various funds used for agriculture throughout Guizhou have risen 100 million yuan. Of this, budgeted outlay is up 60 million yuan, new increases in development funds for impoverished regions total 20 million yuan, and small fertilizer subsidies are up 20 million yuan.

III. Jiangsu

Building and rural construction funding institutions are making further improvements in farm production conditions. Fund sources have been tentatively decided as follows: ten percent of after-tax profits from township enterprises; a tax on enterprise capital retained in villages; 50

percent of the rurally retained income taxes on individual village households; and funds returned by the state out of increases in industrial, commercial, and income taxes on township enterprises. Investment in capital construction on farmland has been restored to 1980 levels--from 19 percent in 1985 it has now been restored to 25 percent.

IV. Yunnan

Agricultural investment has reached 20 percent of capital construction investment, and operating expenses in the agricultural sector have been restored to 1984 levels. During the Seventh Five-year Plan 15 million yuan per year will be drawn out in Yunnan for funds to disseminate agricultural science and technology. Of this, 10 percent per year of funds for technological reform in Yunnan will be used to transform agricultural technology. One-third of the three expenses for science and technology in Yunnan will be used for agriculture. Fifty percent of the 60 million yuan earmarked to assist undeveloped regions will be set aside for agriculture and for farm sideline processing industries. Beginning in 1986 a portion of slaughter taxes and industrial and commercial taxes will be withdrawn and used to develop agriculture.

V. Hubei

Beginning in 1986, according to state stipulations a portion of increases in township enterprise income taxes and industrial and commercial taxes levied by the state will be used to aid agriculture. During the Seventh Five-year Plan over 30 percent of total provincial investment in construction will be set aside for capital construction on farmland.

VI. Beijing

The 82.2 million yuan of farm aid in 1986 (after deducting operating costs) represents a 13.8 percent increase over 1986.

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CSO: 4007/419

RAPESEED HARVEST OUTLOOK TERMED 'PLEASING'

Beijing NONGMIN RIBAO in Chinese 12 May 86 p 1

[Article with individual provincial reports by Yin Bangliang [1438 6721 5328] (Sichuan), Lu Xinyun [7626 1800 7189] (Henan), Li Dongchu [2621 2639 0443] (Jiangxi), Chu Dayi [5969 1129 4135] and Liu Jainguo [0491 1696 0949] (Zhejiang), and Yin Dawen [0603 1129 2429] (Guizhou): "Rich Rapeseed Harvest in Sight, Timely Organization of Purchase Needed"]

[Text] Editor's note: We joyfully see from this group report that rapeseed crop progress for most of China's rapeseed production districts is pleasing, and a rich harvest is in sight. According to agricultural department predictions, and despite losses in production from disasters already being inevitable for some districts, this year's national summer rapeseed total production volume will increase over last year due to a more than 5 million mu increase in acreage, stepped up field management, and a rise in unit production. Currently, the rape harvest is in progress. It is hoped that rape purchasing departments are energetically making preparations, promptly organizing for purchasing, putting transport channels into order, and are not letting the peasants worry about the appearance of "selling oil is difficult." [End Editor's note]

Sichuan Will Have a One-Tenth Production Increase over Last Year

The way the rape seed crop is growing in the various areas of Sichuan Province is pleasing, and a rich harvest is in sight. Some Chuan-nan districts are already in the middle of harvesting. A total of 13.12 million mu in rape was cultivated this year in Sichuan Province, a 670,000-mu expansion in cultivation over last year. This is the most rape ever cultivated in a single year. Total production may reach 10.85 billion kg, a more than 10-percent increase over last year.

Henan Yields Set a New Record

Henan Province's reform of the rapeseed purchasing system has mobilized peasant enthusiasm for rape cultivation. This year's rapeseed harvest is unprecedented. It is predicted that yields will reach 275,000 tons, 50,000 tons more than the record yield in 1982. There was serious drought last winter and spring. Peasants paid attention to fertilizer application, managed painstakingly, and the harvest area reached 3.9 million mu. It is predicted that unit and total rapeseed production will surpass highest levels in history.

Jiangsi Might Surpass the Highest Levels in History

An area of 4.71 million mu in rapeseed was planted this year in Jiangsi Province. It is predicted that 165,000 tons of rapeseed might be harvested, a 7.8-percent increase over the 153,000 tons in 1985 and a 3.1-percent increase over the past highest yield of 160,000 tons in 1982. Though large areas across the whole province suffered wind and hail damage from 10 to 20 March, because of the way the crop is growing and the 500,000 mu increase in area over last year, a production yield for this year is within sight that will surpass past highest levels.

Zhejiang Production Will Shrink 70,000 Tons over Last Year Because of Disaster

The area of rapeseed cultivation this year in Zhejiang is 4,249,000 mu, a 143,000-mu increase over 1985. Because of the seriousness of the damage, it is predicted that rapeseed yields for this year will be 356,000 tons, a 70,000-ton reduction over last year. Clouds, rain, and low temperatures were experienced last winter and spring just when the rape was at the seedling stage, and there was a lot of downy mildew, sderotium disease, and other damage. There was especially severe torrential rain and hail last month on the 9th and 10th in Ningpo, Jiaxing, Hangzhou and elsewhere. The damaged rape area was 70,000 mu, and a 73 million-jin reduction in production is predicted. Seedling conditions are bad in Zhejiang, approximately 20 to 30 percent are third-rate seedlings. Currently, peasants are everywhere in the middle of strengthening management to prevent the spread of disease and insect damage.

Guizhou Has Second Higher Year in History

This year Guizhou will have the second highest rapeseed production year since the Guizhou historical high in 1982 (a total yield of 460 million kg). Total yield will reach 375 million kg, an increase of more than 110 million kg, or 39.6 percent, in production over last year. At present, peasants in all localities are energetically preparing for the harvest. There was successive drought in many areas of Guizhou last winter and spring. A series of measures was adopted in Guizhou to bring in this summer's rich crop harvest: (1) The provincial government ruled that wide open purchases be implemented for rapeseed. (2) The area was expanded. The province's rape harvest area is 5 million mu, a real harvest area of more than 250,000 my greater than last year. (3) Seed quality in all localities was everywhere better than last year, and field management was promptly strengthened and a good foundation set for a rich rapeseed harvest.

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CSO: 4007/451

BRIEFS

CONFERENCE URGES FARMER AID--Lanzhou, September 3 (XINHUA)--Participants at a conference on farming in the dry areas of North China have advised the central government to subsidize fertilizer sales and train the region's farmers in modern technology. According to conference proceedings made public today, other recommenations made by the 130 scientists at the meeting included:
--boosting grain production in dry areas to make them self-sufficient;
--encouraging grass growing for raising animals on land unsuitable for grain;
--communicating the latest agricultural research findings and information about new technology to farmers as rapidly as possible. Scientists at the meeting said they expected droughts in the dry areas of north China to worsen and water sources to become increasingly scarce. [Text] [Beijing XINHUA in English 1206 GMT 3 Sep 86] /8309

CSO: 4020/1

BRIEFS

MAYOR ON BOOSTING FOOD INDUSTRY--Beijing, September 15 (XINHUA)--Conditions for foreign investment in the capital's foodstuff industry will remain good, with tax breaks and future demand for foreign imports continuing, said Mayor Chen Xitong today. The city council values the industry highly, listing foodstuffs as one of the economy's industrial pillars, together with electronics, automobiles and building materials, said Chen at the opening of an exhibition for the local food industry. Over the past five years the city invested more than 800 million yuan (216 million U.S. dollars) in the industry for technical renovations and new plant construction, and bought 190 single machines and complete sets of equipment worth 130 million U.S. dollars from abroad. Total investment was more than three times the total for the previous 30 years. Output value of the industry increased at an annual rate of nine percent since 1981 to reach 2.42 billion yuan (654 million U.S. dollars) last year, but still fails to meet the needs of 10 million residents: one million transients each day and one million foreign tourists annually. Displayed at the exhibition are 5,000 varieties of food, mostly famous brands and fine quality products, including a wine fermented from osmanthus flowers which won gold medals at world competitions, and newly-developed, low-tar cigarettes. [Text] [Beijing XINHUA in English 1552 GMT 15 Sep 86] /8309

CSO: 4020/1

BRIEFS

SCIENCE TRAINING UPGRADES OUTPUT--Guiyang, September 10 (XINHUA)--Thanks to the spread of science and technology in southwest China's Guizhou Province industrial and agricultural output has increased. In 1985 a peasant woman of Dushan County earned more than 13,000 yuan (3,500 U.S. dollars) growing mushrooms. Like her, peasants living in remote mountain areas of the province believe that science and technology can help them to realize their dreams to be wealthy, according to a provincial official. In the past two years, technicians of the provincial rural popular science association went to the area and trained 600,000 peasants, the official said. In Dabang village of Xishui County they established 11 peasants' science associations, with a membership of 178. In addition, there is a training center in the village, which has turned out 540 technicians in various fields for the county since 1985. To date the province has 2,340 rural popular science associations distributed in districts and villages, which publish 4,000 varieties of popular science books and newspapers for the peasants, the official said. [Text] [Beijing XINHUA in English 0814 GMT 10 Sep 86] /8309

CSO: 4020/1

CORN EXPORT EFFECTS ON STOCK PRODUCTION ANALYZED

Beijing ZHONGGUO SHANGYE BAO in Chinese 15 May 86 p 2

[Article by special correspondent Shi Xizhi [2514 5054 0037] under the rubric: "Market Trends": "Sharp Rise in Corn Exports Brings Drastic Increase in Feed Prices: The Hidden Declining Trend in Hebei Hog and Chicken Production"]

[Text] In 1985 Hebei exported 500,000 tons of corn. In the first 2 months of 1986 Hebei has already accomplished its export assignment of 128,682 tons of pure yellow corn. This represents a 4.3 -fold increase in exports over the same period of 1985. In addition, we have arranged to export 90,000 tons more pure white corn and variegated corn than was planned for. Estimates in the areas concerned show that this year Hebei's total corn exports may surpass the critical mark of 800,000 tons, and will increase 60 percent over 1985.

Given the sharp rise in the quantity of corn exported and the expansion of the feed processing industry, the price of corn in Hebei's domestic markets is now increasing drastically. The Hebei Livestock and Aquatic Products Bureau said in a report of its findings that after October 1985 the per-kg price of blended chicken feed rose 0.10 to 0.16 yuan and the price of corn rose 0.12 to 0.16 yuan in Shijiazhuang, Hengshui, Xingtai, and Tangshan. The major causes of the rise in feed prices were the significant increase in the scale of corn exports for foreign trade, and the increasingly aggressive competition everywhere to buy corn, which forced up the price of the commodity. For example, we made eastern Hebei a corn export base, and in 1985 the province bought 500,000 tons of corn from Tangshan and other prefectures and cities to export for foreign trade. The price was as high as 0.36 to 0.38 yuan per kg, and this caused a general rise in the selling price for corn all over the province.

The sharp rise in corn and feed prices inevitably greatly increased the cost of raising pigs and chickens so that profits from livestock breeding dropped notably. In addition, pork and chicken circulation channels are obstructed: both inside and outside Hebei cold-storage facilities for pork are full in the large and medium urban market areas, and market sales have dropped off. In live-hog and fresh-egg market areas prices have taken a downward trend: the county food sector is making no profit on operations and has been compelled to force down purchase prices for live hogs and fresh eggs. This has led to low morale among people raising hogs or chickens. People increasingly prefer to consume the eggs rather than sell them, so the quantity of commodity eggs has declined correspondingly. To different degrees, all of these factors are concealing the critical declining trend in hog and chicken production.

To counter this situation, Hebei's state-run commercial food sector is now speeding up the adoption of remedial measures to support hog and egg procurement in production areas and to aid hog and chicken production.

12510
CSO: 4007/435

INTERVIEW ON FERTILIZER PRODUCTION, SALES, USAGE

Shijiazhuang HEBEI RIBAO in Chinese 16 May 86 p 2

[Article: "Improve Quality, Succeed at Joint Management, Achieve Comprehensive Coordination Among Fertilizer Production, Marketing, and Use--Hebei Provincial Department of Petrochemical Industries Director Zhang Jiashu [1728 1367 2885], Department of Agriculture Deputy Director Lu Yulan [0712 3768 5695], and Supply and Marketing Cooperative Economic Association Vice Chairman Geng Jirong [5105 4949 2837] Answer a Reporter's Questions"]

[Text] Question: How can we guarantee product quality in production?

Answer: We must rely primarily on enhanced enterprise management. On behalf of enterprise, the major departments responsible for the chemical industry in each prefecture and city must conscientiously enhance leadership and earnestly implement the economic responsibility system to further arouse productive initiative among enterprise staff and workers. We must focus on quality improvement, continue to practice comprehensive quality control, set into motion professional competition and comparative appraisal, and set about enhancing products to levels of excellence. In order to produce high-quality phosphate fertilizer, we must accomplish the "four maintenances" and "one comparative appraisal": we must maintain tight controls over ore so that no ore below the 24 percent grade gets into fertilizer plants; we must maintain production of scientifically compounded ores; we must maintain strict control over technological standards; and we must maintain efforts to strengthen postproduction management and improve the conversion rate. All fertilizer enterprises must rigorously enforce the quality inspection system and keep substandard products from leaving the plant. All phosphate fertilizer enterprises must conduct business strictly in accord with the "four maintenances" and produce phosphate fertilizer of 12 percent phosphate content or above. Finally, an examination and appraisal should be conducted once each season and the results circulated province-wide.

Question: What are the strengths and weaknesses of low-potency chemical fertilizers?

Answer: They can be differentiated only by comparison, and their strengths and weaknesses are also relative. Among the low-potency fertilizers, as far as ammonium hydrogencarbonate is concerned its molecular structure itself determines a relatively low nitrogen content (17 percent nitrogen), whereas urea contains 46 percent nitrogen. If fertilizer application methods are inappropriate it easily decomposes and volatilizes, thus it is not as stable as urea: it has obvious, glaring weaknesses. However, so long as application methods are appropriate, and given equal quantities of nitrogen, ammonium hydrogencarbonate is as effective as urea. If you compare 3 tons of ammonium hydrogencarbonate with 1 ton of urea, the former surpasses the latter both in price and effectiveness. Three tons of ammonium hydrogencarbonate contain 51 effective nitrogen components and cost only about 450 yuan, whereas 1 ton of urea contains only 46 effective nitrogen components and necessarily costs more than 500 yuan. The consumers themselves are invited to do some serious calculations and decide whether to buy ammonium hydrogencarbonate or urea. Taking ordinary superphosphate as another example, although it is relatively low in effective phosphate content, in addition to water-soluble components its effective components include sulphur and calcium essential to agricultural crops. So long as it is applied suitably it is as effective as an equivalent application of ammonium phosphate. The per-unit cost of effective phosphate is also lower in superphosphate than in ammonium phosphate. Farming comrades say that if and when ammonium phosphate adversely affects agriculture, applying phosphate fertilizer can act as their ace in the hole. This makes sense.

Question: What is the state of fertilizer resources this year in Hebei?

Answer: Comparing 1986 with 1985, fertilizer resources in Hebei generally show domestic nitrogenous fertilizer holding steady, declining imports of ammonium phosphate, and a fairly major shortage of low-potency phosphate fertilizer. This year urea resources amount to approximately 730,000 tons and locally produced ammonium hydrogencarbonate totals 3.4 million tons; resources for both products are essentially on a par with 1985 levels. Imports of ammonium dihydrogenphosphate have been cancelled, reducing resources by 200,000 tons compared with 1985. Local production of ordinary superphosphate is a problem currently being studied. As of the end of April only 10 of China's 79 phosphate fertilizer plants were in production, and they had produced 80,000 tons of phosphate fertilizer--10 percent of the year's planned production. If, beginning in June, the 33 plants that have obtained production permits and the 11 plants that are going to obtain production permits all start up, by October of this year we will have only 800,000 tons including our current reserves. This is still 450,000 tons short of agricultural needs. Predictions generally are that by the wheat planting season a serious shortage of phosphate fertilizer will arise.

Question: How are services developing now with respect to fertilizer supply?

Answer: Now rural areas have established farm production services stations, through which farmers are provided with information, advice, and technical services. We have initiated soil testing to guide farmers in conducting scientifically formulated fertilizer applications. Farmers are required to make an appointment to order goods, and sales personnel deliver the goods right to the door. We have launched survey forecasting and are conscientiously organizing the supplies of goods based on farmers' fertilizer requirements. Through various kinds of services we are actively supporting the rural commodity economy.

Question: What role does fertilizer play in agricultural production?

Answer: The experience of various world nations verifies that increasing fertilizer applications is the most outstanding and most effective way to increase the yield per unit of cultivated land. In the past 20 years or so gross world grain production has doubled and unit yields have improved remarkably. When analyzing the causes of increased world grain production the Food and Agriculture Organization of the United Nations reckoned that 50 percent was due to increased fertilizer application. In Shijiazhuang Prefecture an average of 216.9 jin of fertilizer is applied per mu of cultivated land and the per-mu yield is 1,170 jin, whereas in Zhangjiakou Prefecture, which applies the least fertilizer, 21.9 jin is applied per mu of cultivated land and the per-mu yield is only 227 jin. The facts show that increased fertilizer application plays an extremely important role in improving agricultural yields. Increasing fertilizer application, using the inorganic to enhance the organic, ensuring stable yields to promote equilibrium, and improving unit yields are strategic measures for agricultural development in Hebei.

Question: How do we apply fertilizer scientifically?

First, we must survey the soil and apply fertilizer based on the state of soil nutrients. According to a survey of soils in 118 counties, 65 million mu--about 70 percent of all cultivated land--has soil containing less than 10 ppm rapid available phosphorous. Increasing the application of phosphate fertilizer on this land would bring striking results. In particular, increasing the application of phosphate fertilizer most clearly results in increased yields on plots of land where a lot of nitrogenous fertilizer and little phosphate fertilizer has been used, and nitrogenous fertilizer has been applied appropriately. On plots of land that normally produce around 400 jin per mu, where the rapid available phosphorous content of the soil is 20 to 30 percent [as published], 20 to 30 jin per mu of phosphate fertilizer should be applied. Where the soil contains 10 to 20 ppm of rapid available phosphorous, 40 to 60 jin of phosphate fertilizer should be applied, and where it contains less than 10 ppm of rapid available phosphorous, 60 to 80 jin of phosphate fertilizer should be applied. If we consider the ratio of nitrogen to phosphorous, we can synthesize production practices based on recent Hebei test data, divide cultivated land into high-, moderate-, and low-yield areas, and separately determine a relatively rational nitrogen-phosphorous ratio for each different production area. In high-yield areas producing 600 to 800 jin per mu a nitrogen-phosphorous ratio of 1:0.25 is suitable; in moderate-yield areas producing 300 to 600 jin per mu a ratio of 1:0.5 is suitable; and in low-yield areas producing 200 or 300 jin per mu a ratio of 1:0.5 to 1:1 is suitable.

Second, we must apply fertilizer in accordance with crop characteristics and the specific properties of the type of fertilizer concerned. Nitrogenous fertilizer produces outstanding results with wheat, corn, paddy, and cotton, whereas on legume crops little or no nitrogenous fertilizer and relatively more phosphate and potassic fertilizer should be applied. Root tuber crops (potatoes, Chinese yams) should also receive more phosphate and potassic fertilizers. Ammonium nitrate is unsuitable for use on paddy fields, and luhua andan [3048 0553 6941 3225] fertilizers are not suitable to be used on tobacco, hemp, potato, or grape crops. It is inadvisable to apply too much highly concentrated chemical fertilizer, such as ammonium dihidrogenphosphate, at one time: 20 to 30 jin at a time is best. If too much is applied the crops will be damaged.

Third, the fertilizer must be applied at the critical time for the crops. All crops have a critical time period during which they need fertilizer, and if one jumps the gun on this critical period or lets it slip by the fertilizer will be less effective. For example, on wheat the best results are derived from nitrogenous fertilizer if it is applied when the crop is turning green and during the jointing stage: 1 jin of ammonium sulphate can increase the wheat yield by 4 jin or so. If the same fertilizer is applied during the booting stage each jin of ammonium sulphate can increase the yield by only 3 jin; at the earing stage it can increase the yield by 3.4 jin. Phosphate fertilizer should be applied during and after the seedling stage. For corn the best results from nitrogenous fertilizer occur if it is applied before the tassels appear. Equal applications of nitrogenous fertilizer after the final singling of seedlings and before the tassels appear is not as effective as one application prior to the tassling. For paddy the greatest application of nitrogenous fertilizer should occur during the tillering stage. For cotton the quantity of nitrogen required during the period from the squaring stage to the beginning of the flowering stage accounts for 50 percent of what is needed during the growing period, and fertilizer is best applied at that time. As far as application methods are concerned, we should switch from surface to deep application, and from broadcasting to furrow or hole application in order to get the most out of the fertilizer.

Question: How can we mobilize farmer initiative to invest in and prepare fertilizer?

Answer: In the past couple of years, due to changes in grain procurement methods and the inability of agricultural services to keep up, in some places reduced investment in farming, extensive cultivation, abandonment of cultivated land, and destruction of land resources has cropped up among a few farmers. We hope that leaders at all levels will conscientiously carry out pricing policies, alleviate the farmers' burdens, see to it that industry aids agriculture, and establish sound systems of rural services. We also hope they will implement policies and measures to safeguard agricultural and land resources, publicize the argument that increased output can be obtained only through increased investment, and mobilize the vast masses of farmers to invest in and prepare more fertilizer and apply more organic fertilizer. This will foster improved soil fertility and guarantee increased agricultural production and income.

12510
CSO: 4007/430

HEBEI

BRIEFS

WHEAT PROCUREMENT--Hebei Province reaped a bumper wheat harvest this year. As of 15 August, the province had stored 1,240,000 tons of wheat purchased according to contracts, thus overfulfilling this task; and the peasants purchased more than 212,000 tons of wheat on the province's behalf. [Summary] [Shijiazhuang HEBEI RIBAO in Chinese 20 Aug 86 p 1 SK] /8309

CSO: 4007/1

FARM MECHANIZATION REFORM DISCUSSED BY FORMER OFFICIAL

Heilongjiang NONGCUN FAZHAN YANJIU [STUDIES ON RURAL DEVELOPMENT] in Chinese No 3, 1986 pp 45-47

[Interview of Ma Jing, former director of the Heilongjiang Farm Machinery Bureau by staff reporter: "Comrade Ma Jing Discusses Farm Mechanization Reform"; date and place not given]

[Text] Not long ago, one of our staff reporters visited Comrade Ma Jing [7456 2417] to discuss such issues as the status of and remaining problems in the farm mechanization reforms that have been going on in this province for more than a year, along with major tasks in farm mechanization work for 1986.

[Question] As reform of the rural economic system continues to progress, Heilongjiang's agricultural mechanization work has also undergone a series of reforms. How do you view the post-reform status of agricultural mechanization?

[Answer] As to how the issue of post-reform agricultural mechanization should be treated, some comrades are not entirely in agreement. I believe that agricultural mechanization is undergoing stable, healthy development during the reforms.

First, farm machines are emerging as commodities, allowing peasant households to purchase them and mobilizing the peasants' enthusiasm for carrying out their own farm mechanization. Operational modes have also changed from the solely collective operations of the past to diversified modes coexisting, so that farm mechanization is now vital and thriving. According to statistics as of late November 1985, the province has 202,000 small, medium, and large tractors, with 4,878,000 horsepower. This is a 92.7 percent increase over the end of 1982 in the number of tractors, and a 23 percent increase in horsepower. At the same time, there have been changes in model structure. In the 1970's Heilongjiang had primarily large and medium-size farm machinery, the ratio of large to medium to small machinery being basically 1:1:1; in 1985 that ratio was 1:2:7. This change in model structure not only facilitates ensuring that the demand for mechanization of field operations is met but is also beneficial in expanding the realm of farm mechanization. It is suited to making adjustments in rural industrial structure and provides the conditions for developing a commodity economy; it is also suited to the actual situation of land being worked by individual households and improves the production capacity of peasant households.

Second, agricultural mechanization is expanding from planting alone into the areas of agriculture, forestry, animal husbandry, fishing, industry, commerce, transport, construction, and services. In 1985, farm mechanization was more and more widely used in rural transport, tree planting and afforestation, harvesting and storage of forage grass, processing of agricultural and sideline products, the construction materials industry, house-raising of poultry, tending of fishponds and so on. According to statistics as of late October, mechanized operations in these fields had reached 170 million standard mu, accounting for 35.6 percent of all mechanized operations.

Third, a network of farm machinery services is beginning to take shape, meeting the demand for many-tiered dealings in farm machinery. Of the province's 1,146 towns and townships, 966 now have farm machinery management services stations; various types of service organizations have been set up in 40 percent of the villages; and there are now more than 31,000 specialized farm machinery services households engaging in hired plowing, transport, repair, and processing, thus creating the beginnings of a multi-tiered farm machinery services network.

Fourth, farm machinery enterprises and businesses have strengthened their activity and become more vital through reform. For a long time in the past the province's 95 county-level farm machinery building and repair shops relied on state subsidies to get by; in 1982 their losses reached 9,515,000 yuan. After the economic relaxation and invigoration that began in 1983, their operating results became better and better; that year their losses dropped to 4,463,000 yuan, while in 1984 their losses changed to profits, putting an end to a 19-year history of losses, and by the end of the third quarter of 1985 their net profits were 1,954,000 yuan. In 1984, the province's 83 farm machinery supply companies realized 4,977,000 yuan in profits, and in 1985 they broke through the 6,000,000 yuan mark, reaching a historical high.

It can be affirmatively stated that the main trend in Heilongjiang's farm mechanization is good. As adjustments are made in the rural industrial structure and as a commodity economy develops, farm mechanization will be pushed into an ever more important position, and the province's farm machinery enterprises and businesses will experience a period of broader, more penetrating, and higher growth.

[Question] You just said that farm machinery operating modes are changing from one type of operation to many types coexisting. Would you please discuss these different operating modes?

[Answer] Farm machinery operating modes in Heilongjiang Province have undergone several reforms. Up until the Third Plenum, there was basically only the collective model operations. Since 1983, with reform of the rural economic system, the operating modes for farm machinery have also changed, with state, collective, cooperative, and household operation coexisting. In the province at present, the proportions of operations by large and medium-size tractors are 77 percent for household operations under household ownership, 17.4 percent for cooperative operations under joint-household ownership, 5.3 percent for contract or centralized operations under collective ownership, and 0.3 percent for station operations under state ownership.

[Question] What do you believe is the most important problem at present?

[Answer] First, I don't think the usefulness of farm machinery is adequately exploited, especially in the case of large farm machinery and implements. Although there has been a great increase in the number of tractors in recent years, the total volume of operations has increased very little, and the horsepower load has decreased tremendously. The volume of field work in particular has still not returned to the 1982 level. According to statistics, the province's volume of field operations was still 8 percent lower in 1985 than in 1982. In 1985, there were declines in 31 counties in the volume of three operations: machine sowing, cultivation, and plowing under in the fall. Utilization of large machinery is especially poor, and there has even been an outflow of large tractors from some counties in miscellaneous grain regions and mountainous and semimountainous areas, with many villages bereft of large tractors, which has had an impact on agricultural production. In some places the soil has not been turned over for 2 or 3 years now; old-fashioned farm implements are used for mounding, and muddipping, with very little plowing. In some places the soil has already hardened and the "three ponds" have been restored, with reeds, garland chrysanthemuns, and lettuce taking over in ponds. If this problem is not resolved, it may affect the province's grain production and rural economic development.

Second, the relaxation of controls has meant a decline in farm implement technology. During the process of reforming the ways in which farm machinery are used, some comrades believe that it is not necessary for us to control machinery contract operations or household operations under household ownership, that it is enough for services to be provided properly, with services replacing control. In many places, after the farm machinery brigades were disbanded, no corresponding village-level management services organization was established, so that no one was seeing to the management of farm machinery at the village level. This loosening of management has brought about an increase in the farm machinery accident rate. In 1985, 71 people were killed in the province, a 24 percent rise over 1984. There has been a clear decline in the technical levels of farm machinery; according to surveys in a number of counties, 60 percent of the caterpillar tractors are operated despite defects, 10 percent are out of operation, and only 30 percent meet technical standards.

Third, the steps taken to loosen up and invigorate the farm machinery enterprises have not been big ones; many enterprises lack capacity for self-development and do not have enough reserve strength. Some farm machinery manufacturing and repair plants to date have no products in demand; their management is chaotic, product quality is low, consumption is high, and economic results are wanting. Some even continue to suffer losses. Some farm machinery supply companies do not have up-to-date information, their channels of circulation are blocked, they have slow fund turnover, their management costs are high, and their economic results are low.

[Question] To deal with these problems, what do you think are the areas to be concentrated on this year?

[Answer] In terms of production, we must first focus on the inadequate mechanization of grain production. The key here is to concentrate on mechanized production of wheat and soybeans, corn, and rice. In areas growing wheat and soybean, the experience of the Keshan Farm and Keshan County must be disseminated, and a cultivation system combining overturning, loosening, and harrowing should be implemented along with a crop-rotation system, according to local conditions. Standardized operations and comprehensive measures to increase yield should be carried out to raise wheat and soybean unit yields and quality and improve the stability of yields per mu. In miscellaneous grain areas where corn is the main crop, actual local conditions should be followed in enthusiastically promoting the dry-cropping technology of moisture-retaining soil preparation, moisture-saving sowing, and moisture-storing deep hoeing as used in Shuangcheng County and Zhaozhou Chaoyang Township, in order to expand the area of mechanized corn sowing, create experience in high yields, and achieve new developments in mechanized corn sowing in the province this year. In rice-growing areas, the Hailin County's techniques of growing seedlings in grid trays and transplanting them mechanically must be enthusiastically popularized to promote increased paddy production.

This year the volume of field work should not only be restored to the historical high, but new breakthroughs should be made, new production results achieved, an and economic returns increased.

In terms of perfecting the operating modes, they should be guided gradually towards cooperative operations, in keeping with local conditions, starting from reality, and maintaining diversification. Centralized and contractual operations under the system of collective ownership should be consolidated and perfected; the development of diverse forms of cooperative and joint operations should be encouraged; the policy of allowing individual peasants to purchase and operate farm machinery shouid be continued; specialized farm machinery households and mechanized household farms should be supported. As production is specialized and the socialization of services grows, individual farm machinery operations should be guided and encouraged on the basis of the will of the masses so as to gradually implement diversified cooperative and joint operations.

The solution for those villages which now have no caterpillar tractors is as follows: first, the township (town) farm machinery management services station may call its outstanding loans, purchase machinery, and give priority to providing substitute plowing services to peasant households in those villages having no tractors. Second, tractor aid may be organized through neighboring villages, with plowing or substitute plowing contracts being signed. Third, the villages may use the money from resale of equipment and some investments for impoverished districts to purchase new equipment to provide substitute plowing for the peasant households.

In terms of management, the top priority in farm machinery work is to improve farm machinery management. Regardless of the mode of operation, if management is poor it is impossible to take advantage of farm mechanization. Management work should now focus on the following tasks: turning purely administrative measures into a comprehensive administrative method combining administrative, legal, economic and technical services. Not only must the needed administrative and management work not be weakened, it must be strengthened; counties, townships (towns), and villages should all have full-time personnel to handle this.

Township (town) farm machinery management services stations must assign special resources to see to management, and services must not be allowed to replace management. Once farm machinery has become a part of every household, exclusive reliance on administrative control will be unable to meet the demands of the new situation, and it will be necessary to establish a complete regulatory system, strengthen legal control, and institute legal mechanisms. We have been slow in undertaking this work. This year, joint surveys should be carried out from the province down to the counties to set and strengthen a number of farm machinery control regulations to give them legal force. At the same time, various economic measures must be summarized and applied, such as the economic responsibility system, a system of rewards and penalties, etc., to promote experience in farm machinery management and push it ahead. In addition, broad development of technical training, dissemination of models, and consulting services will promote improvements in management levels.

In terms of farm machinery services, construction of the farm machinery services network must be strengthened. At present 20 percent of the province's towns and townships still have not set up farm machinery services organizations. In keeping with the principle of state, collective, and individual together, a policy of "Whoever starts an enterprise should run it and reap the profits" should be implemented, making the best use of time and creating conditions for the orderly establishment of what needs to be established.

The town and township farm machinery management services stations should not be transferred to lower levels. The leadership systems of those stations that have already been transferred to lower levels should be complemented and improved. Twofold leadership, by the county farm machinery bureaus and the township governments, should be implemented, with a clear division of labor and responsibility between the two, so as to take advantage of the functions of the township farm machinery management services station; for those stations that have not been reassigned to lower levels, the provincial government has already made it clear that there are to be no further reassignments.

[Question] As regards to the issue of perfecting the modes of farm mechanization operating modes, could you discuss these measures more concretely?

[Answer] For existing contractual operations under the collective ownership system, we must see to concentrating our forces and perfecting the contract responsibility system. The village farm machinery services teams should certainly be consolidated and run properly, giving priority to agriculture, providing comprehensive services, with independent accounting and responsibility for profit and loss, gradually establishing an economic entity, and exploiting their dominant role in farm mechanization. Regardless of whether contracts are given to the team, the group, or the individual, they should not be resold. If the contract period is too short, it should be extended; contracts should be for a minimum of 3 to 5 years so as to solve the problem of jerryrigged machinery. Reasonable contract costs should be taken out and adjustments made in charges that are too high or too low. There should be special management and utilization of the depreciation and overhaul costs put aside; these funds are not to be diverted. Overhaul costs should be the subject of a team (group) contract to ensure regular repair of engines. The internal distribution system should be strengthened and remnants of egalitariasism overcome. Distribution should be according to work attendance, technical levels, scope of responsibility, and the amount of contribution so as to fully mobilize contractor enthusiasm.

For cooperative operations by joint households, the impact of large farm machinery can be fully exploited; this is a new mode of operations created by the masses, and it should be enthusiastically encouraged to promote its consolidation and development. Various forms of cooperation and joint work should be recommended; in particular, the conditions must be created and positive leadership provided to implement full-fledged joint household operations on the basis of voluntarism and mutual benefit. The various internal systems of production, finance, distribution, and democratic management for cooperative operations should be established and strengthened as quickly as possible, gradually establishing a cooperative fund system to prevent the dissipation of resources and ensure maintenance, renewal, and expanded reproduction of machinery.

Mechanized household farms and specialized farm machinery households are new to the rural scene; they should be enthusiastically supported and steadily developed. They should be helped with the training of operating, repair, and management personnel in order to improve operations management, raise technical levels, increase economic returns, and get them to better serve as models. Conditions should be created for ordinary farm machinery households to utilize large-scale machinery, with expanded services and operational range, to guide them in developing toward specialized farm machinery households or specialized commodity grain households. For those households without resources to operate equipment that is difficult to maintain and which has an impact on production in their village, machinery and implements may be taken back, through negotiation and voluntarily, to be operated on a contract basis by the village. Recovery of small numbers of large-scale farm machinery and implements should certainly be accompanied by conscientious ideological work, with policies clearly discussed, so as to avoid the appearance of a spirit of "Indian giving," arbitrariness, and other tendencies. Cases of excessively low pricing and excessively long repayment schedules should be reexamined by the appropriate personnel of the township and village governments and organizations to find a reasonable solution.

State-owned and station-operated farm machinery should be better managed and utilized and conditions created for positive growth and expansion. In particular, the villages in mountainous and semimountainous regions are small, and the operation of large-scale machinery where it is much needed should be further developed. In villages without the resources to operate such large tractors, village stations may be set up. Areas owing outstanding sums to the state may have their machinery recovered, to be operated by the township farm machinery services station, to provide substitute plowing services for the masses.

13322/13045
CSO: 4007/481

HEILONGJIANG

RESULTS ASSESSED ON STATE FARM MANAGEMENT REFORMS

Beijing RENMIN RIBAO in Chinese 10 May 86 p 2

[Article by XINHUA reporters Wang Laixi [3769 0171 0823] and Peng Yi [1756 3015]: "The First Year of Organizing Family Farms: A Report on the Results Operating System Reforms in Heilongjiang Reclamation Areas"]

[Text] One year has already been completed in the effort to initate family farming throughout Heilongjiang state farms, and within and outside the reclaimed areas, there is great interest in the results and prospects for reform. Recently, reporters surveyed eight state farms--Suibin, Qianfeng, Longtou, Shuangyashan, Hongwei, 852, 854, and 857--and visited 41 family farms. They consulted a large volume of data, and facts convincingly bear out that initiating family farming on state farms is advantageous in a way that could never be matched under the former pattern of production and operation.

I. Vitality and Energy

In a year of severe disasters, results varied greatly. In 1985 over 137,000 family farms of all sorts appeared in Heilongjiang reclamation areas. Of these, 122,000-plus were growers operating on a total 21.51 million mu, or 84 percent of all arable land. The family farms carried out policies of "ownership by the whole people, household operation, planned guidance, independent accounting, and individual responsibility for profits and losses."

In 1985 severe natural disasters plagued the reclaimed areas and affected 16.46 million mu, or 71 percent of the sown area. Of this, there was no harvest on over 3.97 million mu of land, but total yields of grain and legumes approached the levels of the previous year. The gross value of industrial and agricultural output rose 8.1 percent over 1984, operations proceeded evenly, and there was a slight surplus. Sixty-four percent of the family farms profited.

At 4 state farm administration offices on the Sanjiang Plain--Hongxinglong, Baoquanling, Jiansanjiang, and Mudanjiang--the reporters found out that in 1981 the 50 state farms administered by those offices experienced severe floods and waterlogging and produced a gross grain and legume yield of only 900 million kg. Forty-five state farms incurred losses and the overall defecit totalled 370 million yuan. By contrast, when this area met with similar natural disasters in 1985 the gross grain and legume yield reached 1.67 billion kg (86 percent more than in 1981), only 16 state farms faced losses, and the total defecit amounted to only 20 million-plus yuan. This miracle was created largely by the 90,000-plus family farms. When waterlogging occurred in the spring and summer everyone on the family farms, all ages and sexes, went out to the fields and braved the rain day and night to drain off the water. During the wheat harvest season there was an unbroken spell of wet weather and many family farms propped up plastic sheets to keep out the rain, turned over the grain, and used radiated heat, essentially forestalling wheat mildew and rot.

The masses themselves raised 40 million yuan and in one year made great efforts to organized mechanization. In the past, agricultural mechanization on state farms relied completely on state-funded equipment: "the state puts up the money, the workers till the land." This old convention has now been broken. Previously, Shuangyashan State Farm possessed only 56 combines and could not harvest all the wheat once the rainy season began. Last year, family farms on this state farm raised 520,000 yuan on their own and purchased 13 combines, enhancing their harvesting capacity. During the wheat harvest this state farm was also beset with rainy, gusty weather, but was nevertheless able to reap a good wheat harvest. Based on partial statistics, in 1985 family farms in the entire reclaimed area raised a total of over 40 million yuan on their own and purchased 3,210 tractors, combines, and farm vehicles of all sorts. In the previous 30 years the state had to set aside about 70 million yuan per year to buy farm machinery for the reclaimed area, whereas in 1985 the state made essentially no such investment. This is unprecedented.

Every family has a farm manager, every household handles accounting. In the past only a single farm manager attended to affairs on state farms. Now the situation has changed and there are thousands of small farm managers on family farms to worry about things. At the time of the reporters' investigation the state farms were just conducting the 1985 financial accounting. Family farm managers were often observed handling their own account books, comparing accounts with production team accountants, and, in some cases, uncovering mistakes in the accountants' books. Many people who in the past knew only how to live and draw wages are now talking about "investment," "costs," and "yield."

Every family runs a farm and employment is no longer a concern. In family farm operations each state farm divides the land not only among regular staff and workers, it also apportions a certain quantity of land among dependents and among sons and daughters who are not yet employed. Some state farms also assign a share of land in advance to middle-school students who are about to graduate. This way there is no need for the state to approve quotas, the state farms do not issue wages, and the "employment troubles" faced by a great many children of staff and workers in reclaimed areas are readily resolved. In 1985 the reclaimed areas absorbed 73,000 dependents and as-yet-unemployed youth to take part in farm production labor.

When there are rights of initiative there are many ways of doing things. With family farms there is no way that staff and workers can go to the fields every day and squander their efforts indiscriminately as they did before. As soon as the busy season is past they can turn their attentions to production projects beyond the fields. Of the family farms investigated by these reporters, whether run by individual or joint households, most worked on more than one job simultaneously. In many cases the income from sidelines on family farms exceeded that from cultivation. In 1985 there were more than 44,000 staff members and workers throughout the reclaimed areas who switched from grain and legume production to other production and service fields. The number of staff and workers on construction teams in the reclaimed areas increased 30 percent in 1985 over 1984 and output value doubled. Cash crop area expanded 44 percent and animal husbandry also grew considerably.

II. Problems and Investigations

In the course of gathering material, these reporters conducted an intensive investigation into the three problems most talked about in society.

Can enthusiasm for household operation be linked to the advantages of mechanization? In Heilongjiang more than 80 percent of the cultivated land is planted with wheat and legumes and over 80 percent of production therefrom employs mechanization. This is an advantage enjoyed in the Heilongjiang reclamation areas. In 1985 the vast majority of wheat and legume production was contracted to family farms. Of this, close to 20 percent of mechanized households operated with a complete set of farm implements on a fair-sized stretch of land and had already integrated the two satisfactorily. Though the vast majority of family farmers labor enthusiastically, some are unmechanized or incompletely mechanized. Contradictions frequently appear between mechanized and unmechanized households over the time frame for plowing on behalf of the latter and over the quality of work. Because of this, some comrades feel that wheat and legume production is incompatible with family farm management and that plowing teams or major contracting units should be restored.

Suibin and Qianfeng State Farms have come up with a kind of loose cooperative association that satisfactorily resolves this contradiction. Their method is as follows: a certain number of mechanized and unmechanized households jointly till 2,000 to 3,000 mu of contiguous land. Thus the machinery essentially forms a complementary set, mechanized tasks are unified, and there is integrated implementation of technical measures to increase yields. However, household management and independent household accounting are preserved, and inter-household plowing arrangements and labor exchanges are both done based on stipulated fee payment. This kind of cooperative association involving independent household operation and coordinated production is similar to "farm machinery circles" abroad: it maintains both the appropriate scale for mechanized operation and the rights of independent operation on the family farm. The cooperative association on Qianfeng State Farm also selects a temporary accountant for the busy season to coordinate production among all the households. Everyone consciously accepts this coordination and the farmers rarely suffer from contradictions.

Has the state of farm implement technology declined? Some people say: "After agricultural implements are transferred they are run into the ground and worn down to scrap iron in a couple of years." What are the facts? These reporters conducted an investigation on Shuangyashan, Suibin, and Qianfeng State Farms. Taking into consideration repair cost investment, in 1985 the proportion of intact farm machinery, the in-service rate, and time availability were all higher than the previous year.

On some state farms there are problems with the declining condition of vehicles. Based on what the reporters know, one reason for this is that many state farms, after transferring possession of the farm implements to staff and workers, completely washed their hands of the matter and in some instances even dismissed maintenance team leaders from farm machinery units and production teams. Another reason is that in the first year staff and workers were short of money on hand and reduced vehicle maintenance as far as possible. A third reason is that family farmers worried that policies would change and feared that the state farms would take back the vehicles, so that if they conducted repairs themselves the money would be wasted. This latter is the primary reason.

How are we to handle the "huge profits and huge losses" on family farms? These "huge profits and huge losses" are known locally as "bright red and vivid white". On the one hand this refers to the vast disparity in profits and losses among family farms, and on the other hand it points up the great fluctuation in income between years of bumper harvest and crop failure. Within a single team the reporters observed family farms that profited several tens of thousands of yuan and those that lost several tens of thousands of yuan. Suibin State Farm did not "pinch back" or apply "equalitarianism and indiscriminate transfer of resources" to family farms that profited significantly; rather, it persevered in implementing the policy that "for those who deliver a sufficient amount to the state and the state farm, all surplus may be retained for personal use." Simultaneously, Suibin mobilized these households to deposit a portion of the surplus in individual accounts with the state farm, and paid them interest at a rate higher than the regular savings deposit rate. When faced with crop failure and losses or with unforeseen mishaps the households can withdraw and use the money at any time. In addition, for family farms that suffer severe losses and owe money, many state farms have adopted methods to guarantee daily necessities, ensure production, and assure that debtors are not pressed for payment. This gives some older staff and workers a "feeling of security."

The above problems, which have appeared during reforms in the Heilongjiang reclamation areas, have not been entirely resolved. However, if we rely on the masses and probe ceaselessly in practice, these problems will not be difficult to solve. The prospects for family farms are encouraging.

12510
CSO: 4007/419

BRIEFS

WHEAT PROCUREMENT--Heilongjiang Province to date has procured more than 310,000 tons of wheat, which only accounts for 18.3 percent of the total volume fixed by purchase contracts signed early this year, because of the flood disaster in some areas during the harvesting season. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 0900 GMT 1 Sep 86 SK] /8309

WHEAT HARVEST--Heilongjiang Province has basically completed wheat harvesting. As of 5 September, some 29 million mu of wheatfields had been reaped, accounting for more than 99 percent of the wheatfields under harvest. This year the province's wheat sowing acreage was 29.29 million mu, more than 1 million mu less than last year. Thanks to good management, the total output is expected to approach last year's figure. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 2100 GM T 6 Sep 86 SK] /8309

CSO: 4007/1

BRIEFS

COMMERCIAL FOOD GRAIN BASES--Zhengzhou, September 7 (XINHUA)--Henan Province will, in the next five years, invest 300 million yuan in setting up 40 commercial food grain bases, mainly producing wheat, a local official said here today. This will bring the acreage under marketable food grains in Henan to 3.3 million hectares, or half of the province's total cultivated areas, the official said. Upon completion, these food grain bases will reap 55 percent of the province's grain output as against the present 42 percent, and they are expected to produce 60 percent of the province's marketable food grains. The official said that the 300 million yuan-investment will be used mainly to build and repair irrigation facilities, improve seed strains, popularize advanced farm techniques and control plant diseases and insect pests. [Text] [Beijing XINHUA in English 1027 GMT 7 Sep 86] /8309

CSO: 4020/1

BRIEFS

WATER CONSERVANCY PROJECTS--According to incomplete statistics, Hubei Province has increased its ability to store, draw, and supply water by 150 million cubic meters and increased and improved its irrigated areas by 2,307,000 million mu. At the same time, the province has resolved the difficulties of 330,000 people and 150,000 head of cattle in drinking water. [Summary] [Wuhan Hubei Provincial Service in Mandarin 1000 GMT 13 Sep 86 HK] /8309

CSO: 4007/1

SPECIAL LOANS FOR GRAIN FARMERS ANNOUNCED

Changsha HUNAN NONGYE [HUNAN AGRICULTURE] in Chinese No 5, 1 May 86 p 2

[Article by Li Lingming [2621 7227 2494], of Hunan Agricultural Bank, under the rubric "Rural Policy": "Hunan Agricultural Bank and the Hunan Grain Bureau Are Jointly Initiating Discount Grain Loans for Rural Households that Have Grain Contracts Assigning Relatively Heavy Procurement Quotas"]

[Text] To stimulate farmer enthusiasm for grain cultivation and support development in Hunan grain production, Hunan Agricultural Bank and the Hunan Grain Bureau have jointly decided to extend 40 million yuan worth of discount grain loans throughout the province in 1986 to rural households faced with grain contracts assigning relatively heavy procurement quotas.

The target of these Grain Contract Procurement Quota Disount Loans is rural households that, calculated based on the household unit, in 1986 face assigned grain procurement quotas of over 200 jin per person in addition to tax grain. However, these loans will not be extended to rural households that have assigned grain procurement quotas of less than 200 jin per person, those that sell little grain to the state, or those that have no shortage of production funds. Based on the discount loan plan issued by the province, these loans will be granted by various local banks directly to the basic grain sector. They will become part of special farm and sideline product credit, and be administered as a separate account. In accordance with numbers issued by higher levels in the grain and banking sectors, the basic grain sector will coordinate with townships and villages and extend credit on the basis of the number of households with assigned grain procurement quotas. The credit will be granted to rural households that sell grain to the state, particularly aiding those that sell a great deal of grain. This credit must be earmarked for the specified purpose only, and no unit, sector, or individual may divert it for another use. Interest on these loans will be calculated at the favorable rate of 3 percent per month and will be paid by basic grain enterprises to local agricultural banks. These loans will be granted to rural households prior to the end of April 1986 and will be recalled when the early and mid-season paddy crops are laid up in August and September.

However, rural households that sell grain to the state but do not meet the above stipulations, those that have signed grain procurement contracts but do not meet the quantity standards described above, and those that either have not obtained or continue to have financial problems after obtaining discount credit production funding, can reapply to the agricultural bank or the credit cooperative for loans at interest. These will be given priority credit aid in order to ensure that we complete our grain contract procurement assignment throughout the province.

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CSO: 4007/419

BRIEFS

COMBATTING DROUGHT--In the past 2 weeks, some 4 million people have been fighting drought each day in the rural areas of Hunan to ensure a bumper harvest of late rice, dry grain, and industrial crops. There has been little rain in most parts of the province in the past month, and the drought has become serious. Some 43,000 cadres have gone to the frontline to help the masses solve various difficulties. Some 140,000 diesel motors, 40,000 electric motors, and 200,000 waterwheels are now in operation each day in the drought-fighting effort. [Summary] [Changsha Hunan Provincial Service in Mandarin 2200 GMT 4 Sep 86 HK] /8309

GRAIN PROCUREMENT--Hunan has fulfilled 1 month ahead of schedule its task of procuring and storing early and mid-season rice. By 5 September, the province had stored over 2.85 million tons of grain, an increase of 44.3 percent compared with the same time last year. The quality of all the grain is of medium-grade and higher. [Summary] [Changsha Hunan Provincial Service in Mandarin 2200 GMT 11 Sep 86 HK] /8309

CSO: 4007/1

BRIEFS

TRACTOR USE--Zhangchun, August 28 (XINHUA)--Peasants in northeast China have 124,000 tractors, nearly double what they had in 1982, an official of the provincial statistics bureau said today. During 1985, the official said, the capacity of agricultural machinery in rural Jilin jumped 21.5 percent to 6.4 million horsepower. Nearly 70 percent of the province's rural output is hauled by tractors, the official said. The official attributed the progress to the system of allowing peasants to farm on a household basis, which has made them willing to buy farm machines to boost output. Between 1983 and 1985, they said, individual rural families spent 300 million yuan on farm machines. [Text] [Beijing XINHUA in English 0952 GMT 28 Aug 86 OW] /8309

CSO: 4020/1

BRIEFS

IRRIGATION SYSTEM--Yinchuan, September 3 (XINHUA)--Some 150,000 of the residents of the Ningxia Hui Autonomous Region's arid south have clean drinking water for the first time. Thanks to the completion of a 170 million yuan (45.9 million U.S. dollars) water project, the largest in northwest China, "the people of this area will be able to raise themselves out of poverty within a few years," a provincial official said here today. "This will drive away the drought," he said of the new system, adding that it will enable the area's residents--mostly Muslims of the Hui ethnic minority group--to raise livestock and grow crops without fear of catastrophic weather. With a capacity of 22 cubic meters per second, the new system can pump water 380 meters above its source. The system covers five counties and a large state farm and can irrigate 15,000 hectares of land. The area it serves has few reliable water sources and very little rain, and as a result has made its residents among the poorest in China. The official predicted that the system will increase the value of the yield of every hectare in the area by 1,800 yuan (486 dollars) a year, and that user fees for the water would pay back the project's cost within ten years. Construction of the system began in 1978, bringing with it thousands of workers, technicians and engineers. [Text] [Beijing XINHUA in English 1746 GMT 3 Sep 86] /8309

CSO: 4020/1

BRIEFS

FERTILIZER SHORTAGE--The XIBEI XINXI DAOBAO [Northwest Information Herald] publishes letters from various places in Shaanxi reporting a serious shortage of chemical fertilizer in many areas this year. According to the letters, Pucheng County is short of 9,000 tons; Fengxiang County is short of 2,000 tons of ammonium carbonate and 800 tons of urea; Qishan County is short of 2,600 tons of nitrogenous fertilizer and 4,600 tons of phosphate fertilizer compared with previous years; and Sanyuan County is short of 5,400 tons of chemical fertilizer. The paper appeals to the chemical production and supply and marketing departments, and other departments concerned, to pay attention to solving problems in production and sales of chemical fertilizer, so as to ensure the smooth progress of autumn sowing. [Text] [Xian Shaanxi Provincial Service in Mandarin 0200 GMT 16 Sep 86] /8309

CSO: 4007/1

SHANDONG

GAINS ASCRIBED PARTLY TO BETTER FARMING TECHNIQUES

Beijing NONGYE KEJI TONGXUN [AGRICULTURAL SCIENCE AND TECHNOLOGY NEWSLETTER] in Chinese No 4, 17 Apr 86 pp 2-3

[Article by Chai Langao [2693 5695 7559], Shandong Agricultural Office Farm Technology Station: "Five Key Measures that Increased Agricultural Output and Value During the Sixth Five-year Plan"]

[Text] During the Sixth Five-year Plan, agricultural production developed significantly in Shandong. In that five-year period gross output value rose approximately 8 billion yuan, an average increase of 1.6 billion yuan per year. In addition to other factors in increased output, the following five improvements in planting techniques were significant.

1. Continual Readjustment of Planting Composition As Needed

Based on commercial production requirements, during the Sixth Five-year Plan departments at every governmental and agricultural level changed their previous single-minded concentration on grain production and energetically expanded cultivation of cash crops that have relatively high output values. Comparing the latter period of the Sixth Five-year Plan with 1980, cash-crop area increased more than 18 million mu, with the fastest growth occurring in cotton cultivation. In 1984 cotton growing area was up 14 million mu over 1980 and annual output was 3 times greater. The switch from grain to cotton can raise output value by over 50 yuan per mu. Farmers use this capital to purchase chemical fertilizers, pesticides, and machinery, thus improving production conditions. This promotes improved yields overall in grain, cotton, oil-bearing crops, and other crops, and creates a beneficial agricultural production cycle. Toward the end of the Sixth Five-year Plan, the price of cotton declined and sales were poor, so Shandong promptly reduced its cotton area and actively expanded peanut cultivation. In 1985 peanut growing area was up nearly 4.7 million mu over 1984 and gross yield rose to approximately 650 million kg. There was an unbroken spell of wet weather from the last 10 days of September to the middle 10 days of November 1985, and sunlight was insufficient, resulting in low-quality cotton and vastly reduced yields. However, the peanut crop was affected relatively little, and under these circumstances peanuts brought in 50-70 yuan more per mu than did cotton. In addition, in 1985 ambari hemp growing area rose 1 million mu and tobacco and vegetable growing areas and output values both increased. In the past few years we have also vigorously expanded orchards, and the gross fruit yield rose 30 percent from 1981 to 1985.

In grain production we have actively expanded cultivation of wheat, our principal crop, and have popularized interplanting and multiple cropping of wheat with cotton, peanuts, and vegetables, as well as autumn grain crops. In 1985 the multiple crop index was 6 percent higher than in 1980. Total grain fields in the province have declined 7 million mu, but gross yield has increased 7 billion kg. The wheat harvest area in 1985 was 4.5 million mu greater than in 1980 and the autumn sowing extended wheat cultivation nearly 10 million mu. In 1986 the gross wheat yield will be double that of 1980. The area planted in sweet potatoes, sorghum, and soybeans--crops with fairly low output values--declined somewhat, cultivation of summer millet was expanded on dry fields, and dry cultivation of paddy was extended on irrigated land. In 1985 the area sown in millet was up about 1.3 million mu over 1980 and model expansions of dry paddy cultivation reached 400,000 mu. The readjustment of planting composition helped to increase quantity and quality and improve dietary composition, and it fit in with the new circumstances of growth in commodity production.

2. Improvement in Production Conditions, Full Exploitation of Liquid Fertilizer To Raise Production

During the Sixth Five-year Plan, in the wake of the rise in peasant income there was a corresponding increase in investment in liquid fertilizer. In addition, implementing the production responsibility system stimulated peasant production initiative, and we took full advantage of the potential yield increases possible with liquid fertilizer use. During the Sixth Five-year Plan 100,000 electromechanical wells were added and irrigation and drainage machinery increased by a factor of nearly 4 million horsepower. To conserve water usage and make irrigation convenient, many farmers used pipe to substitute for ditches and employed spray irrigation instead of furrow irrigation. In the western part of Shandong full use was made of the advantages of river and lake irrigation, and wheat in the region along the Huang He was generally assured of 2 to 3 irrigations. Right now there are over 40 million mu of land in Shandong on which irrigation is ensured. As far as wheat is concerned, there are better than 25 million mu on which irrigation is guaranteed and another 15 million mu on which there are regular conditions for irrigation. This is the essential gurantor of high, stable wheat yields in Shandong.

During the Sixth Five-year Plan chemical fertilizer applications in Shandong rose over 1.6 million tons. Right now an average of 80-plus kg of chemical fertilizer is applied per mu of cultivated land, up more than 15 kg over the closing period of the Fifth Five-year Plan. Shandong leads the nation in both production and application of chemical fertilizer. In recent years we have also changed our past emphasis on nitrogen over phosphorus and we now apply over 2 million tons of phosphate fertilizer per year. Since 1981 applications of zinc fertilizer have been extended to more than 10 million mu of land in zinc-deficient regions. Following the use of soil survey results, applications of nitrogen, phosphorus, potassium, and trace elements are becoming more and more scientific and rational.

3. Prompt Supply of Improved Varieties

Since 1980 a total 670 million kg of improved crop varieties have been disseminated throughout Shandong, an average of 112.5 kg per year. This is more than double the average amount disseminated annually in the the 3 years from 1976 through 1978, prior to the 3d Plenum. The major improved agricultural crops have been essentially disseminated and the total improved crop area measures 143 million mu, or over 95 percent of the total sown area. In the past few years the popularization of wheat varieties Fu No 63, Jinan No 13, and Shandong Nos 1 through 7; corn hybrids Yandan No 14 and Shandong Nos 1 through 4; cotton breeds Shandong Nos 1 through 6; peanut varieties Haihua No 1 and "Hua"; have all directly stimulated the growth of agricultural production. The prompt supply of improved breeds is also an essential guarantor of readjustment in planting composition. For example, in 1985 4,000 kg of peanuts were supplied for planting, and this was sufficient to meet the demand for expanded peanut production.

4. Enthusiastic Dissemination of New Mulching Techniques

Mulching is a new technique that has arisen in recent years. In Shandong in 1985 mulching was performed on over 1.7 million mu of cotton fields, 1.1 million mu of peanut fields, 500,000 mu of vegetable fields and orchards, and 70,000 mu of wheat fields double cropped with a single mulching. Shandong leads the nation in total mulched area. Several years of experience verify that mulching can generally raise ginned cotton output by 15 kg per mu, peanut and legume yields by 90 to 100 kg per mu, and wheat output by about 100 kg per mu. When used in vegetable and melon cultivation mulching can not only increase output, it can also hasten market availability and improve value.

As for conventional techniques, in the past few years, through the efforts of numerous agricultural scientists and technologists, several major crops have been combined into a complete, targeted, standardized system of cultivation techniques and have been disseminated for use in production. For example, disseminating and applying a standardized, high-yield summer corn cultivation method that stresses improved compact breeds, prudent increases in density, and fertilizer applications in fixed quantities at fixed times has made high-yield fields out of some moderate-yield fields that had been hovering on the verge of progress. From 1980 through 1984 this method was disseminated to a total 23.43 million mu and produced an average per-mu yield of over 400 kg. Of this, in 1984 11 million mu of land produced over 400 kg per mu and 2 million mu of land produced over 500 kg per mu. Techniques of dryland wheat cultivation on infertile soil, late wheat cultivation, and intensive sowing on high-yield fields are also becoming more familiar and being applied in production.

5. Improvements in Blight and Pest Surveying, Reporting, and Control Methods

In the past few years the objects of blight and pest surveying and reporting in Shandong have grown in number, from 8 right after the founding of the PRC to 25 today. Beginning in 1981, to promptly and accurately issue blight and pest forecasts, crop protection stations began testing coded telegraph links with local market survey and reporting stations and using mathematical statistics and electronic computers to conduct analyses. Beginning in the 1980's Shandong began to disseminate high-potency, low-toxicity, low-residual pesticides, and to use Chrysanthemum ester pesticides to replace organic chlorine pesticides. During the Sixth Five-year Plan there were 111.4 million mu of biologically controlled land in Shandong. Because the agricultural sector actively disseminated and popularized biological controls, developed technical contracting and technical services, switched pesticide types, and improved control methods, pesticide applications are declining year by year. In the 1970's Shandong used about 130,000 tons of chemical pesticides per year, and in 1984 we used only 74,000 tons. This not only improves control results and reduces investment, it also reduces pesticide poisoning.

12510
CSO: 4007/423

BRIEFS

YUNNAN LIVESTOCK PRODUCTION--Farm villages everywhere paid attention last year to expanding the livestock industry, and livestock industry output value rose. Calculated according to 1980 prices, Yunnan's livestock industry output value reached more than 1.7 billion yuan, an 8.4 percent increase over last year. The obvious special points in Yunnan Province's 1985 livestock industry growth are: (1) High economic benefits and obvious social benefits. Farm villages everywhere combined livestock industry growth with market demand, and energetically expanded edible meat livestock. Yunnan Province's total pork, beef, and mutton yields for 1985 reached 568,300, a 10.2-percent increase over the preceeding year and the highest record in history for Yunnan Province. (2) Livestock industry growth was combined with guaranteeing the steady increase of grain production and improving border and mountain area transportation conditions to expand the commodity economy. There was a greater increase in 1985 in work animals in principal grain production districts and in nationality districts. Compared with last year, there was a total increase of more than 171,000 head of work animals, which was 88.5 percent of Yunnan Province's total increase in the 17 prefectures and autonomous prefectures of Zhaotong, Qujing, Chuxiong, Wenshan, Honghe, Dali, Simao, and so on. [Text] [By Wang Weijin (3769 4850 4897)] [Text] [Kunming YUNNAN RIBAO in Chinese 11 Jun 86 p 1] 13152/12948

CSO: 4007/451

END

JPRS-CAG-86-036

20 OCTOBER 1986

China Report

AGRICULTURE

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1985 ECONOMIC STATISTICS FOR STATE FARMS RELEASED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION] in Chinese No 4, 24 Apr 86 pp 12-13

[Article by Statistics Department, State Farm and Land Reclamation Bureau: "A Survey of National State Farm and Land Reclamation Production in 1985"]

[Text] 1985 marked the final year of China's Sixth 5-Year Plan. During the period of the Sixth 5-Year Plan, state farm and land reclamation units throughout the country put into effect all programs and policies of the Party and the state with regard to farming and land reclamation, instituted the system of taking responsibility for one's own finances, launched agricultural, industrial and commercial integrated operations, and the operation of farms by the families of employees in three major reforms that produced remarkable economic results. In 1979, after having gotten out from under the stigma of 12 continuous years of losses, the entire system made profits year after year, and by 1985 every province showed a profit. Accumulated profits for 7 years in the state farm and land reclamation system throughout the country totaled 4.55 billion yuan from which 3.39 billion yuan in taxes was paid to the state. The building of state farm and land reclamation production was on a healthy road of solid development.

The basic condition of state farm and land reclamation nationwide and its achievements in the building of production in 1985 are now made public as follows:

(1) Number of State Farm and Land Reclamation Enterprises

In 1985, there were 2,940 independent accounting enterprises in the national state farm and land reclamation system. This included 2,055 farms, 503 industrial plants, 56 construction enterprises, 27 transportation and communications enterprises and 299 businesses. There were 3,986 branch farms, 28,033 production teams, and 8,936 industrial enterprises not accounting independently, and 37,011 business network outlets not accounting independently.

A total of 940,000 family farms are already in operation throughout the country, and 1.62 million employees in 1.05 million households are taking part in employee family farms.

(2) Population and Employees

The population of the state farm and land reclamation system for the country as a whole totals 11.26 million, 96,000 fewer than in 1984. This includes a farm population of 10.37 million, 237,000 fewer than in 1984. During 1985, 118,000 people were born on farms and 42,000 died. The natural rate of population increase was 7.3 per thousand. The total population included a farm administered rural population of 823,000.

Employees numbered 4,924,000 including 4,488,000 employees on farms. Employees in independent accounting industries numbered 202,000; employees in transportation and communications numbered 13,800; employees in construction industries numbered 78,000, and employees in businesses numbered 26,500.

(3) Industrial and Agricultural Gross Output Value and Profit

Industrial and agricultural gross output value for the state farm and land reclamation system throughout the country was 16.74 billion yuan. Figured in comparable terms, this is a 14 percent increase over 1984. This includes a gross output value for agriculture of 7.82 billion yuan, or 46.7 percent of the gross output value of industry and agriculture combined. Gross output value for industry was 8.92 billion yuan, or 53.3 percent of the gross output value of industry and agriculture combined. This included 2.52 billion yuan from food and beverage and tobacco processing industries, 1.149 billion yuan from the textile industries, 800 million yuan from machinery industries, 410 million yuan from chemical industries, 680 million yuan from the construction industry and other non-metal processing and manufacturing industries, and 1.3 billion yuan from other industries. Output value of the aforementioned industries shows the make up of state farm and land reclamation industries to be still dominated by light industry and textiles, the output value of which was 71 percent of the gross output value of state farm and land reclamation industries, and 7 percent higher than in 1984. Next come machinery, chemical and construction industries.

The gross output value of industry and agriculture for state farm and land reclamation enterprises throughout the country in 1985 was 67 percent higher than in 1980 for a 5 year average speed of increase of 10.8 percent. Eight provinces and municipalities, 53 regional bureaus (administrative bureaus or divisions) and 596 farms doubled their output value in 5 years. Twenty-nine percent of all farms in the state farm and land reclamation system doubled their output value. Independent accounting industrial plants that doubled their output value numbered 94, or 18.7 percent of all industrial plants in the system.

State farm and land reclamation system profits nationwide were more than 800 million yuan. This was the first time since founding of the People's Republic that no province in the state farm and land reclamation system showed a loss. State farm and land reclamation departments in 29 provinces and in the three cities of Guangzhou, Nanjing and Kunming all showed profits.

The labor productivity rate for all personnel increased from the 2,903 yuan of the previous year to 3,228 yuan in 1985 for an 11.2 percent increase.

(4) Farming, Forestry, Animal Husbandry, Fishing Industry and Rubber Production

The total land area of the state farm and land reclamation system nationwide is 431 million mu. This includes 60 million mu of farmland, or 14 percent; 183 million mu of grassland, or 43 percent; and 34 million mu of forestland, or 8 percent. The forestland includes 6 million mu of rubber, or 1.5 percent. The water surface area covers 9 million mu or 2 percent, the tea plantation, fruit orchard and mulberry grove area is 2 million mu, or 0.5 percent, the reclaimable wasteland area is 36 million mu, or 8 percent; and the remaining area is 101 million mu or 23 percent.

1. Farm Crop Production

As a result of severe natural disasters for several years in a row in the three northeastern provinces and the eastern part of Nei Monggol, plus readjustments in crop patterns that reduced the grain growing area, gross output of grain for the state farm and land reclamation system nationwide was lower than in 1984. The grain growing area was 43.72 million mu, 2.81 million mu less than in 1984. Yields averaged 160 kilograms per mu, maintaining the level of 1984. Gross output was 6,984,000 tons, 480,000 tons less than in 1984.

The cotton growing area was 2.84 million mu, 520,000 mu less than in 1984. Yields averaged 54 kilograms per mu, maintaining the level of 1984. Gross output was 152,000 tons, 31,000 tons less than in 1984.

The oil-bearing crop area of 4.39 million mu was 1.48 million mu more than in 1984. Gross output was 278,000 tons, up 106,000 tons from 1984 in a 61.6 percent increase. Yields rose from 59 kilograms to 63 kilograms per mu in a 6.8 percent increase.

The sugar crop area was 1,456,000 mu, up 7.9 percent from 1984. Gross output was 3,367,000 tons in a 14.7 percent increase over 1984.

2. Forestry Production

A forestland area of 33.47 million mu was 6 percent greater than in 1984. This included 1,516,000 mu that was afforested in 1985, 6.3 percent less than had been afforested in 1984. Of the area afforested in 1985, 674,000 mu was timber forest, 74,000 mu was economic forest, and 663,000 mu was shelter forest. Trees scattered here and there numbered 39.689 million in 1985 in a 31 percent decline from the previous year. Most of the decline occurred in Hubei and Liaoning provinces.

3. Animal Husbandry Production

Large livestock animals in inventory at the end of 1985 numbered 1,998,000, 2.5 percent fewer than in 1984. However, the number of milk cows increased from 283,000 head in 1984 to 322,000 head in 1985 for a 13.8 percent rise. There were 356,000 horses, 9.6 percent fewer than in 1984.

At the end of 1985, hogs in inventory numbered 3,523,000, up 5.1 percent from 1984.

Sheep and goats in inventory at the end of 1985 numbered 7,353,000, down 5.9 percent from 1984.

State farm and land reclamation units raised 50,000 martens, 72.5 percent more than in 1984, and they raised 620,000 rabbits, 71.7 percent more than in 1984. They raised 36.59 million poultry, 2.4 percent more than in 1984.

Meat output was 290,000 tons, up 12 percent from 1984.

A milk output of 575,000 tons was 8.2 percent greater than in 1984.

Wool output stood at 16,336 tons, 2.6 percent less than in 1984.

A poultry egg output of 111,000 tons was 26.7 percent more than in 1984.

Output of pilose antlers was 39,615 kilograms in a 2.2 percent increase over 1984.

Honey output was 2,056 tons, down 9.6 percent from 1984

4. Fishing Industry Production

An aquatic products breeding area of 1,918,000 mu includes a 1,773,000 mu freshwater area, or 92.4 percent; and a 7.6 percent sea water area.

Gross output of aquatic products was 80,000 tons, 61.5 percent more than in 1984. This included a freshwater output of 60,000 tons, or 74.9 percent, and a sea water output of 20,000 tons, or 25 percent.

5. Rubber Production

The rubber plantation area of 5,699,000 mu is 2.5 percent more than in 1984. This includes a 3.32 million mu tapping area, or 2.5 percent more than in 1984. Output of dry rubber for the year was 168,500 tons, a slight increase over 1984 despite the effects of windstorm and freeze damage.

6. Fruit, Tea and Ginseng Production

Fruit output was 355,000 tons, up 6.7 percent from 1984.

A tea output of 32,000 tons was 24.7 percent higher than in 1984.

Ginseng output was 1,094 tons, up 21 percent from 1984.

(5) Industrial Production

There are 9,513 industrial enterprises in the state farm and land reclamation system nationwide, including 503 independent accounting units. Broken down by trade, there are 2,525 food and beverage and tobacco industry enterprises or 26.8 percent of the total number; 1,662 construction and other non-metal mining enterprises, or 17.6 percent, 1,032 machinery industries, or 10.9 percent, 296 chemical industries, 350 textile industries, 228 lumber and bamboo enterprises as well as enterprises engaged in the plaiting of bamboo, rattan, coir fiber and grass; 158 coal enterprises, 247 electric power enterprises, 331 sewing enterprises, 115 leather enterprises, 240 papermaking enterprises, and 98 livestock feed enterprises.

Output of major products by these various enterprises is given below:

1. Electric power generation: 860 million kwh, up 11 percent from 1984.
2. Raw coal output: 6,175,000 tons, up 8.8 percent from 1984.
3. Chemical fertilizer output: 104,000 tons, up 1 percent from 1984.
4. Cement output: 1,399,000 tons, up 29.4 percent from 1984.
5. Brick output: 694,000 bricks, up 15.9 percent from 1984.
6. Cotton yarn output: 221,000 bales, up 30.6 percent from 1984.
7. Cotton cloth output: 130 million meters, up 2.5 percent from 1984.
8. Machine-made paper and paperboard: 247,000 tons, up 38.5 percent from 1984.
9. Machine-refined sugar: 318,000 tons, up 20.5 percent from 1984.
10. Alcoholic beverages: 344,000 tons, up 50.3 percent from 1984.
11. Dairy products: 53,000 tons, up 23.8 percent from 1984.
12. Edible vegetable oil: 81,000 tons, up 9.8 percent from 1984.

Pre-tax profits for state farm and land reclamation industrial enterprises totaled 890 million yuan, 280 million yuan deriving from independent accounting industrial enterprises.

(6) Sales and Exports of Agricultural Products

Sales of state farm and land reclamation agricultural products for the country as a whole totaled 5.57 billion yuan, 4.7 percent more than in 1984. Grain sales to the state totaled 3,341,000 tons, 1.5 percent less than in 1984. This included 2,438,000 tons required to be turned over to the state, 5.6 percent less than in 1984. The commodity rate for grain and beans was 47.8 percent, up 1.8 percent from 1984. Cotton sales amounted to 145,000 tons, 6.9 percent less than in 1984. Meat sales to the state amounted to 176,000 tons for a 60 percent commodity rate.

Exports grossed 944 million yuan, up 34.3 percent from 1984. Principal products exported included 278,000 tons of soybeans, 335,000 head of live hogs, 13,800 tons of tea, 122.6 tons of ginseng, 1,122 kilograms of pilose antlers, 818,000 live poultry, 4,724 tons of fresh eggs and 231 tons of prawns.

(7) Investment in Fixed Assets

State farm and land reclamation investment in fixed assets nationwide totaled 2.497 billion yuan for a 35.6 percent increase over 1984. This included a 2.241 billion yuan investment in fixed assets with a value of 50,000 yuan or more, up 43 percent from 1984. Investment in various and sundry fixed assets with a value of less than 50,000 yuan totaled 256 million yuan, down 6.9 percent from 1984.

Included in the investment in fixed assets was a 448 million yuan investment in state capital construction, up 3.8 percent from 1984.

Included in the investment in fixed assets with a value less than 50,000 yuan was a 1.64 billion yuan investment in productive assets, or 73 percent. Investment of 600 million yuan in non-productive assets accounted for 27 percent. This included the investment of 182 million yuan in the building of housing, which accounted for 30.3 percent of the investment in non-productive assets.

Newly added production capacity or facilities for 1985 included the following: Farmland: 844,000 mu; clearing of wasteland for rubber trees: 208,000 mu; for the planting of rubber trees: 238,000 mu; for the tending of rubber trees: 2.22 million mu; newly purchased tractors: 3,043 units; newly purchased hand tractors: 4,059 units; newly purchased combines: 452 units; newly purchased trucks: 2,250 units; buildings used for livestock and poultry production: 391,000 square meters; warehouses: 346,000 square meters; houses: 2,719,000 square meters; school dormitories: 424,000 square meters; and hospitals: 105,000 square meters.

(8) Wage Bill and Employee Income

There are 4,494,000 permanent employees in the state farm and land reclamation system nationwide. Female employees number 2,072,000, or 42 percent of all employees. Among employees on farms, workers engaged in farming, forestry, animal husbandry, sideline occupation and fishing industry production number 2.62 million. Technical personnel number 39,000, administrative personnel 285,000, and personnel engaged in providing social services in hospitals and schools 290,000, or 6.5 percent of employees on farms.

Wages for employees totaled 4.31 billion yuan, up 9 percent from 1984. The average wage for an employee was 880 yuan, 80 yuan more than in 1984 for a 10 percent increase.

(9) Scientific Research, Culture and Education, and Health

There are 872 scientific research units employing 37,000 employees in the state farm and land reclamation system. This includes 6,845 scientific and technical personnel. Scientific research entails the use of 316,000 mu of land and 27,000 workers. Expenditures for scientific research experiments total 27.96 million yuan. Scientific research subsidies amount to 14,445,000 yuan.

There are 13,073 schools of all kinds in the state farm and land reclamation system, including 17 institutions of higher education and 69 technical secondary schools. There are a total of 155,000 teachers in the various kinds of schools including 2,169 in institutions of higher education. Student enrollment is 2,527,000, 12,500 of which is in institutions of higher education and 41,500 in technical secondary schools. In 1986, there will be 1,612 graduates from institutions of higher education and 4,484 from technical secondary schools.

The state farm and land reclamation system has a total of 17,559 medical units including 2,341 hospitals at the farm level or above. It has 68,000 beds for patients and 82,000 medical personnel of whom 27,000 are medical doctors.

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CSO:4007/420

DIVERSE VIEWS ON RURAL FUNDING SUMMARIZED

Beijing JINGJIXUE ZHOUBAO in Chinese 27 Apr 86 p 4

[Article by Zou Shulin [6760 2885 2651] and Liu Ningjun [0491 1337 6511]: "Roundup of Studies in Recent Years of Rural Funding Problems"]

[Text] In recent years, theoreticians have explored the problem of rural funding in a fairly wideranging and deepgoing fashion.

(1) Starting Point For the Study of Rural Funding Problems

One point of view maintains that because of the low percentage of industry in China's economy and the not very high economic results derived from it, looked at in macroeconomic terms, funds for development of rural villages and the agricultural economy can come only from rural villages and the agricultural economy. Therefore, the starting point for study of rural funding problems should be accumulations of the rural economy itself. Correspondingly, the burden of any study of rural funding should be on how to link labor and natural resources, thereby translating advantages in resources into advantages in products, as well as how to focus on accumulations to enliven the flow of goods.

Another opinion holds that one should study the movement of funds between cities and towns from a macroeconomic viewpoint to study the rural funding problem. Rural funding is a broad category. The tax revenue mechanism and various price subsidy methods in the financial system, funds raised by banks and various methods of pooling funds that have risen in recent years are within the scope of the study of rural funding.

(2) The Rural Funds Market

Some comrades suppose that the upsurge of industrialization in rural villages has given rise to an amassing of funds on a society-wide scale for the formation of a currency market that is independent of the existing financial system. The appearance of regional, collective, and industry-wide financial organizations such as various kind of joint-stock companies, city and town enterprises and joint venture shareholders who issue debenture bonds;

and the increasingly brisk activity in borrowing and lending freely among individual households in cities and towns or credit activities among the people all demonstrate the need for forming financial markets.

Yet another group of comrades supposes that even though liberalization of financial markets is a major trend; nevertheless, one cannot suddenly pull out the stops before effective economic controls are in place.

(3) Rural Financial System Reform

Numerous comrades suppose that in an increasingly complex economic life, bank and credit cooperative savings have encountered unprecedented difficulties and are facing a series of conflicts as follows:

The Agricultural Bank should take charge of the management apparatus for the rural financial system and financial markets. It should supervise and put into effect national financial policies, currency policies, credit policies and interest policies, thereby occupying a controlling position in the rural financial system. It should play a dominant role becoming a rural financial organization and a powerful backup force.

Credit cooperatives should genuinely operate as a financial organization in the rural cooperative economy. To do so: 1) sell off shares owned by cooperatives, issue credit shares, and allow peasants to subscribe freely. 2) Credit cooperatives and specialized rural producers should cooperate in the joint development of trade information for the purpose of establishing a regional cooperation organization. 3) The mold that makes credit cooperatives "subordinate to" banks should be broken and authority returned to the people. 4) Planning of credit cooperative reforms should be removed from the purview of banks. 5) The existing credit cooperative set up should be broken up.

Some comrades have proposed that the Agricultural Bank and credit cooperatives should set up an administrative relationship similar to the relationship between the Chinese Agricultural Bank and the Central Bank. County branch banks would become points of contact for the Agricultural Bank and credit cooperatives. Credit cooperatives would follow the method of independent accounting and responsibility for their own profits and losses, and be permitted to deal freely and to go bankrupt. Professionaly, the amount of credit cooperative loans should not be overly regulated by the bank at a higher level.

(4) Characteristics of Rural Funding Activities During the Reform Period

In a nutshell, changes would be made in the several following regards:

1) The dominant role in financial dealings would not longer be played solely by the collective economy; instead there would be diverse economic components including collective units, contracting households, households operating by themselves, and households operating in cooperation. There would be an economic transformation from the unitary to the diverse and on to a complex economy.

2) The funding structure would no longer be the same as in the past when most of it was concentrated largely in the farming industry where grain predominated. Now the funds used in forestry, animal husbandry, sideline occupations, fisheries and rural industrial and business enterprises would gradually increase. There would be a change from a two dimensional structure in which funds were used on a few projects and at a few levels to a main body containing many projects at many levels.

3) Investment of funds would change from traditional skills at the outset to modern skills, and from labor intensive operations to knowledge intensive and skill intensive operations.

4) Short term loan funds would no longer be limited to national bank monopoly dealings. Collective and specialized financial organizations have already begun to be set up in some places; funds are going into factories; funds are being pooled for the purchase of shares, and borrowing and lending among the people using agent trusts is appearing everywhere. Funds are in process of moving from a highly concentrated and closed system of compartmentalization in the direction of a more liberal system of many channels and many forms.

5) A decentralized trend and a relatively centralized trend in the use of funds would co-exist.

9432
CSO:4007/453

INCREASE IN AGRICULTURAL EXPORTS REPORTED

Hongkong CHING-CHI TAO-PAO [ECONOMIC REPORTER] in Chinese No 17, 5 May 86 pp 26-27

[Article by Ding Zhang [0002 4545]: "China's Agricultural Exports Increase"]

[Text] China's success in restructuring the agricultural economy has not only increased her grain production and improved the peasants' standard of living year after year, it has also set the stage for rather rapid growth in foreign exchange earned on Chinese agricultural exports.

Recently, an official in China's Ministry of Agriculture, Animal Husbandry, and Fishery said that exports of agricultural and sideline products created over 4.1 billion dollars in foreign exchange in 1984, up 53.1 percent over 1978, and exports of processed agricultural and sideline products created 6.72 billion dollars in foreign exchange, an increase of 96.7 percent over 1978.

In 1985 there were further increases over 1984 in exports of agricultural and sideline products and finished machined goods. For example, grain exports rose 1.1-fold over 1984, making 1985 the year of highest grain exports since the PRC was founded in 1949 and marking the first time that exports have surpassed imports. Compared with 1984, in 1985 significant increases in agricultural and sideline exports occurred primarily for corn, husked rice, and miscellaneous legumes and grains; other exports, such as edible oils, shelled peanuts, live cattle and poultry, fruit, ambari hemp and jute, soybean dregs, and rugs, all experienced actual increases.

In 1985 China exported 320,000 tons of cotton, approximately 4 times as much as in 1983, and this made China a cotton exporting nation. Formerly China had to import 300,000 to 400,000 tons of cotton from abroad each year. In the single highest year 900,000 tons of cotton were imported. China began to export cotton in 1983 and doubled and redoubled exports in 1984 to a total of 200,000 tons.

In the past few years China's agricultural exports have also been quite successful in breaking into the international market, and there has been an obvious change in the composition of exporting regions. Despite some decrease in 1985 in the number and proportion of agricultural exports to Hongkong and Macao, there was rapid growth in exports of agricultural products to Japan, the Soviet Union, eastern European nations, and the Common Market nations. For example, among exports to Japan, the proportion of edible grain and oil products from China rose from 16.5 percent in 1980 to 25.4 percent in 1985. Chinese agricultural exports to the Soviet Union and eastern European nations rose from 10.69 percent in 1980 to 20 percent in 1985. For the most part we expanded exports there of corn, soybeans, frozen meat, fruit, and other commodities. Those nations are all in need of China's many farm and sideline products.

According to rough statistics, since 1984 30 of China's farm and sideline products and processed goods have produced annual foreign exchange earnings of over 50 million dollars; 19 of these have earned over 100 million dollars, including husked rice, corn, soybeans, cotton, shelled peanuts, raw silk, tea, pork, rabbit fur, cotton yarn, and vegetables.

The increase in agricultural exports has gained much-needed foreign exchange for China's four modernizations.

This official also divulged that the 7th 5-Year Plan initiated this year will vigorously develop agricultural production and expand agricultural exports. The plan calls for total exports of farm and sideline products and processed goods to increase 57 percent over 1984 by the year 1990.

However, we cannot fail to note that in striving to expand agricultural exports China will run into a few problems. Various things like defects in product quality, lack of variety, unrefined processing, and outmoded package designs; as well as disjointed agricultural trading, low enthusiasm among production units, and hinderences in the quality and efficiency of foreign trade transport will all be challenges facing us in how we adapt to market trends. Recently, the agricultural and foreign economic sectors in China and the provinces, municipalities, and autonomous regions all adopted positive measures and smoothly resolved the above problems. This reflects the fact that the departments concerned in China have great faith in the potential for expanding agricultural and sideline exports and are quite certain that, through the restructuring of the economic system now underway, they can resolve any problems they may meet in developing import and export trade.

Ministry of Agriculture, Animal Husbandry, and Fishery data shows that, beginning in 1981, agricultural production in China has moved forward with a average annual growth rate of 10 percent. We are now capable of being self-sufficient in grain and we are more than self-sufficient in cotton: sources of export agricultural goods are increasing every day. In 1985 there was a general reduction in grain growing area everywhere; land area growing coarse grains and poor-quality paddy declined, while land area growing fine grains and high-quality paddy increased by a significant margin. It is estimated that, compared with 1984, oil-bearing crops are up 30 percent, sugar crops are up 25 percent, tobacco is up 29 percent, ambari hemp and jute are up 129 percent, mulberry and silkworm cocoons are up 4.9 percent, and fruit is up 6.4 percent. Also compared with 1984, the quantity of live hogs on hand and the number of slaughtered hogs are up 2.6 percent and 4.5 percent, respectively, and pork, beef, and mutton output are up 7 percent. Total output of aquatic products exceeds 6.5 million tons, an increase of 300,000 tons over 1984.

Through long experience in scientific research and production, China has bred a large number of well-known, superior, special, and new fine varieties that have long had a good reputation. For example, there are the Nanfeng tangerines, which are famous for their thin easily peeled skin, rich sweet fragrance, pleasant sweet-tart taste, and seedlessness; the famed "treasure of fruits", the Chinese yangtao; and the Maowen Jinguan apple, which has been elected China's champion apple. After we expand production we can supply these fruits for export.

The official from the Ministry of Agriculture, Animal Husbandry, and Fishery said that during the 7th 5-Year Plan we will make top quality, low prices, and market suitability our guiding ideology in exporting agricultural and sideline products. The authorities are now adopting measures to expand this year's sources of goods and to improve product quality. As to further mobilizing initiative on export production bases and among farmers to expand production in the planting and aquatic breeding industries, the measures adopted primarily include the following points:

1. We must continue to stabilize and perfect agricultural policy. As we ensure steady growth in grain production we must also develop a diversified economy and continue to expand our sources of export goods.

2. We must enhance efforts to disseminate agricultural science research and technology and work hard to improve product quality. The way to achieve this is to organize key scientific and technical tasks based on the quality and specifications of product varieties; to strive to develop fine new varieties on the foundation of existing domestic fine varieties; and to work on improving varieties with fine breeds of paddy, fruit, vegetables, poultry, and so forth brought in from abroad by the foreign trade sector.

3. We must construct export bases to handle high-quality agricultural and sideline products. We must construct systematized commodity production bases to handle everything from scientific research and production to processing, storage (or cold storage), packaging, and transport. We must make full use of the advantages of coastal regions and other such areas to establish bases for all kinds of export products. Under centralized state planning, these export bases can engage in joint operations with commercial and foreign trade departments and form integrated agriculture/trade, production/marketing economic associations for direct exporting. They can also entrust exporting to the foreign trade departments and engage in joint ventures, cooperative construction, and compensation trade with foreign traders.

4. We must augment construction of basic agricultural production facilities and improve economic results. During the 7th 5-Year Plan farming, livestock, and fishing industries are slated to use about 200 million dollars of foreign capital per year. The focus will be on aiding in the construction of production bases for agricultural, livestock, and fishery export commodities and on developing well-known, special, and superior new products that show great potential.

5. In order to raise enthusiasm for producing agricultural and sideline exports, we will implement preferential policies on foreign exchange

retention, export tariffs, pricing, imports of improved breeds and technical equipment, and so forth, and these policies will differ from those that apply to the domestic market.

6. We must settle harbor handling and transport capacities, enhance our storage capacity, and actively initiate low-volume border trade.

As for the problem of supplying fresh and live commodities to Hongkong and Macao markets, public figures in the Chinese agricultural sector have indicated that success in this area is a top priority for agricultural exporting in China. We absolutely must adopt measures aimed at accomplishing this supply within a short period of time, and our focus should be to produce top-quality commodities such as vegetables, beef, fruit, seafood, flowers, and plants.

The official also said that Hongkong and Macao are international marketplaces. Right now we are faced with a challenge, but we are fully confident that efforts to improve the quality of agricultural products will raise them to international standards or higher. We have this confidence because our success in restructuring the agricultural economy has created the conditions for expanding agricultural exports.

12510
CSO:4007/444

INCOME FROM AGRICULTURAL MACHINERY EXPORTS

OW260028 Beijing XINHUA in English 1659 GMT 25 Sep 86

[Text] Beijing, Sep 25 (XINHUA)--China gained 15.72 million U.S. dollars from agricultural machinery exports during the first half of this year, according to a report to the China agricultural machinery fair which opened here today.

"The export income is 177 percent of that of the same period last year," Tong Jiaxun, an engineer and official of the China National Agricultural Machinery Import and Export Corp. said. "China has about 2,000 factories which produce both farm machinery and internal combustion engines. Dozens of science and design institutes have been built and are at their service for production and construction," Tong added.

The machines have been exported to 97 countries and regions, and enjoy great prestige both at home and abroad. A rice-wheat dual-purpose harvester exported to Southeast Asia has been warmly welcomed by the Asia-Pacific farm machinery program of the UN.

In 1984 and 1985, the Jiangsu-504 model and the Shanghai-504 model tractors won first place in Australian contests.

China's small farm machinery products have been commended at Soviet exhibitions, and small diesel engines have entered the markets of Britain and the United States.

More than 150 kinds of machinery products are on display at the Beijing fair, including tractors, internal combustion engines, farm trucks, combine harvesters, generating sets and livestock equipment.

The year-long fair serves as a window for China's agricultural machinery products and promotes trade cooperation between China and foreign countries.

/9599
CSO: 4020/6

CONSTRUCTION OF BASES FOR FARM EXPORTS DISCUSSED

Beijing LIAOWANG [OUTLOOK WEEKLY] in Chinese No 21, 26 May 86 p 6

[Article by Zhou Yichang [0719 6318 2512] under the rubric "The Length and Breadth of Current Events": "Construct Bases To Produce Agricultural Goods that Will Earn Foreign Exchange"]

[Text] Not long ago, after approval by the State Planning Commission, the Ministry of Agriculture, Animal Husbandry, and Fishery; 27 provinces, municipalities, and autonomous regions; and 7 cities listed individually in the state plan signed an agreement to invest jointly in constructing the first group of 113 bases scheduled to produce top-quality agricultural goods and commodities. This is very significant for expanding exports and earning more foreign exchange during the 7th 5-Year Plan.

Farm and sideline products and processed goods account for a major part of China's export commodities: they comprised 73 percent of export commodities in the 1950's, 63 percent in the latter part of the 1970's, and 44.4 percent in 1984. In 1984 farm and sideline exports totalled 10.008 billion dollars, and they increased further in 1985. Although the total quantity of farm exports is constantly rising, their percentage of total exports is declining. In addition to increases in other exports, the slow expansion of farm exports is a major factor in this decline.

My understanding is that Chinese rice exports, which brought relatively good returns in foreign exchange, formerly essentially dominated the Hongkong market. In recent years, however, the Hongkong rice market has been gradually taken over by Thailand. In 1976 we shipped 210,000 tons of husked rice from the interior to Hongkong, accounting for 64 percent of its total rice imports, but in 1985 shipments fell to 120,000 tons and represented only 34.5 percent of Hongkong's total rice imports. Soybeans have always been China's traditional export commodity, but due to varietal admixing and degeneration in the past few years, Japan, the Federal Republic of Germany, Italy, Great Britain, the Netherlands, and Spain, which formerly relied on China to supply soybeans, began to abandon China in favor of the United States. Fruit is a staple commodity on the international market: on the Hongkong market alone more than 300,000 tons of assorted fruit are sold each year. However, China is now exporting a run-of-the-mill selection of fruit, in addition to which our assortment of early, midseason, and late varieties is not the best, the quality of what we market is poor, and the quantity of fruit we sell to Hongkong is constantly declining. In 1984 fruit from inside China accounted for only 27.8 percent of all the fruit sold in the Hongkong market. This quantity returned foreign exchange earnings of 30 million dollars, or 19 percent of total fruit sales in Hongkong. The Hongkong market imports approximately 300,000 tons of vegetables, and in 1980 China supplied 68 percent of them. However, that figure has now dropped to about 50 percent. This state of affairs not only fails to meet China's needs under the four modernizations, it also poorly serves China's traditional status as a major agricultural nation.

Can it be that China has no top quality agricultural products that can compete with foreign goods? No. At the end of 1985 the Ministry of Agriculture, Animal Husbandry, and Fishery convened the Nationwide High-Grade Farm Produce Judging Exhibition in Beijing. At this exhibition a taste test was conducted by experts to compare 93 rice samples sent from all over China with top-quality rice, including Thailand's See Miw Rice and Japan's Pearl Rice, both top-selling varieties on the international market. Ultimately 16 varieties of top-quality rice were selected, all of which had fine color, fragrance, and flavor. There were even more top-quality fruits: of 143 samples screened, 53 were selected. The Hongguan apple, grown in Sichuan's Maowen Qiangzu Autonomous County, has a fresh color and pleasing flavor. After tasting this apple, Zhu Yongze [2612 3057 3419], manager of the agricultural development department of Hongkong's South China Sea Enterprise Corporation, said: "The outward appearance and internal quality of this apple can rival the U.S. She [5748] apple." The hairless Actinidia artificially cultivated in Wuning County Jiangxi bears a large, good-quality fruit superior to those imported from Hongkong for a dollar apiece.

Why can't China go into batch production with these abundant, top-quality agricultural products? According to this reporter's investigation, besides our past emphasis on quantity rather than quality, our policy on farm and sideline products has been to export whatever we produce, with relatively little consideration for organizing production to meet international market demands. In addition, another important factor is that agriculture has been isolated from trade and production has been divorced from marketing so that producers could not attain an export system favorable to themselves by increasing foreign exchange earnings on exports. Now things are different: during the 6th 5-Year Plan agricultural production in China grew rapidly overall. Five years ago we were a nation that imported grain, cotton, and oil-bearing crops; suddenly we have been transformed into a nation that is self-sufficient in grain, has a surplus of cotton, and exports oil-bearing crops. This has provided us with an excellent material foundation for improving the quality of agricultural products.

This joint state and local investment in building the first group of bases scheduled to produce top-quality agricultural goods and commodities was finally decided upon through consultation based on the public appraisal and selection of top-quality agricultural products initiated extensively by the Ministry of Agriculture, Animal Husbandry, and Fishery in 1985. These bases will produce the following: grain crops, including top-quality husked rice, wheat, corn, and soybeans; top-quality fruits, including citrus, apples, litchis, longans, and Actinidia; and renowned vegetables, teas, flowers, and plants. To construct this group of bases the state has invested a total 120 million yuan to be paid over 3 years, beginning with the current year. Construction is scheduled to be completed by 1988. In order to get the most out of these bases as quickly as possible, many experts believe we must resolve the following issues:

First, we must concentrate our limited funds, focus on satisfactory development of production, and expand construction projects that have a reproductive capacity. Agricultural products transformed into commodities must take shape as a set number of commodities. Therefore, given a guarantee of product quality, these commodity bases must increase the number of products as quickly as possible.

Second, we must gradually improve our capacity to process agricultural products. We must switch from exporting mostly primary and rough machined goods to exporting processed and finished machined goods. In addition to high quality, processing and packaging are major factors in the reason Thai rice is able to dominate the Hongkong market. Thai export merchants mix round-grained and long-grained rice in certain proportions based on the habits and demands of Hongkong residents, and use small 2-jin and 5-jin packages that suit the needs of consumers there. By contrast, China uses large 50-jin and 100-jin hemp bags, and people flinch at the mere sight of them in rainy, humid Hongkong. Consequently, to expand product exports we need to accelerate construction on processing, preservation, storage, packaging, and transport facilities.

Third, we must enhance guidance of construction in base counties, allow producers to gain certain economic benefits from increasing foreign exchange earnings on exports, and arouse their initiative. All localities must operate under principles of unified planning, policies, and external relations to develop different forms of horizontal economic associations. Giving the producers good prospects of gain will guarantee faster production growth and increased foreign exchange earnings on exports.

In summary, we must put the proper principles and policies into effect, fully arouse initiative in all areas, and adopt measures that make the most of local advantages. If we do so, our bases to produce top-quality agricultural goods and commodities will be completed as quickly as possible and achieve good results, and we will realize our potential to earn foreign exchange on exports of farm products.

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CSO: 4007/443

USES, ABUSES OF WATER RESOURCES DISCUSSED

Water Resources Endangered, Misused

Shanghai SHIJIE JINGJI DAOBAO in Chinese 12 May 86 p 14

[Article: "People Are Still Recklessly Destroying Water Resources; Groundwater Has Been Almost Used Up in Beijing, Tianjin, and Tangshan"]

[Text] Despite the stingy way Mother Nature has treated the Chinese nation, people are still recklessly destroying precious water resources.

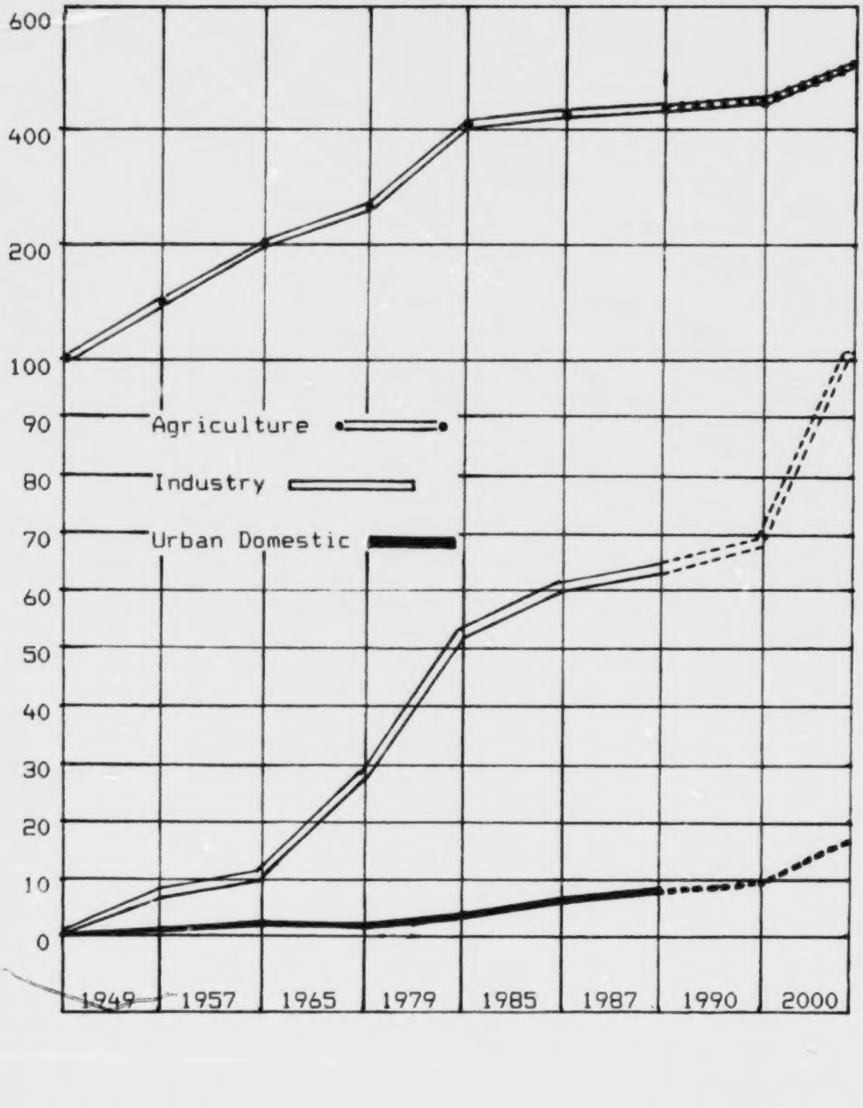
In the first place, the industrial sector lacks a awareness of "water benefits." Right now China consumes 573 stere of water for each 10,000 yuan of industrial output value, and steam power stations consume 1,162 stere of water for each 10,000 kilowatt-hours of electricity. This is rather high on an international scale. At the same time, reservoirs and canals leak alarmingly and agriculture frequently empoys large-scale flood irrigation and series irrigation, which bring low results.

Second, pollution of water resources is extremely severe. In 1979 China discharged approximately 26.44 billion tons of wastewater, composed of 81.2 percent industrial wastewater and 18.8 percent domestic urban sewage. This sewage was essentially untreated and discharged directly into various bodies of water. In addition, substantial applications of organic phosphate and organic chlorine fertilizers have caused pollution in a great many bodies of water, leading to declining water quality in well-watered regions and increasing water shortages in water-poor regions.

Third, we have rapaciously exploited groundwater resources. In northern arid and semiarid regions nearly one-fourth of the shallow groundwater has already been extracted. Comprising that total, we have tapped nearly one-third of the groundwater in the Liao He Plain, almost half of the groundwater in the Huang He Plain, and as much as nine-tenths of the groundwater in the Hai He Plain. Because groundwater resources are renewed slowly or not at all, large-scale groundwater funnels have been created, surface subsidence has occurred in some areas, water quality deterioration and reduced water area are on the increase, and some cities have nearly exhausted their groundwater resources. If things go on this way we will be passing on a parched and cracked earth to our descendents.

Fourth, the waste of water resources is still manifested in the destruction of transport capacity in natural watercourses. Because we have not attached importance to multipurpose development of water resources, when we have built dams on navigable rivers we either have not considered or have seriously underestimated facilities for through navigation. There are now over 4,000 dams on navigable Chinese rivers, and no through navigation facilities have been built on more than 2,600 of them. Since 1952 this has resulted in a reduction of 37 percent, or approximately 50,000 kilometers, in domestic through navigation milage. On the one hand this has caused an extreme shortage in communications and transportation in China, and on the other hand it has led to insufficient development of high volume, low cost through navigation on inland rivers. One after another our golden watercourses are becoming broken river remnants, and we are putting up with it.

Graph 1. Increases in Industrial and Agricultural Water Use in China (in billions of stere)



Importance of Water in Industry

Shanghai SHIJIE JINGJI DAOBAO in Chinese 12 May 86 p 14

[Article: "We Cannot Continue To "Cook Without Water"]

[Text] When economists inquire into industrial resources, they are usually thinking of energy, metal and mineral resources, forest resources, or industrial chemicals. Based on the precept of nearness to natural resource areas, the people established an iron and steel base at Baotou because nearby Bayan Obo is teeming with iron ore; they made Shenyang the center of the machine building industry because Anshan's iron and steel and Fushun's bituminous coal are close by; and they plan to establish pithead power stations in the Shanxi-Shaanxi-Nei Mongol area because China's largest opencut coal mines are located there.

However, the public more often than not overlooks water resources even though cooking without water is not nearly so easy as cooking without rice! Right now many urban areas and industrial zones are seriously short of water, even to the point of affecting city functions and industrial production. It is no wonder that one insightful Japanese economist has pointed out that "As far as natural resources go, Japan has at least two that are abundant: one is deepwater harbors, and the other is water."

In reality industrial development and industrial water use assume a direct proportional relationship. To cite a Chinese example, in 1949 China's annual industrial output value was 14 billion yuan and her industrial water usage totalled 4.9 billion stere (here and below, figures exclude water used for steam power stations); in 1957 industrial output value was 70.4 billion yuan and industrial water usage totalled 11.9 billion stere; in 1965 industrial output value was 139.4 billion yuan and industrial water usage totalled 16.9 billion stere; in 1980 industrial output value reached 499.2 billion yuan and industrial water usage totalled 26.3 billion stere. It is estimated that by the end of this century the value of industrial output in China will reach 2 trillion yuan, and industrial water usage will be as high as 70 billion stere.

Drafting Suitable Water Resource Plan

Shanghai SHIJIE JINGJI DAOBAO in Chinese 1 May 86 p 14

[Article: "Drafting a Water Resource Plan To Suit National Conditions: It is Far Better To Establish a New Industrial Zone and Urban Complex Along the Banks of the Chang Jiang Than To Divert Water From South to North"]

[Text] Seeing that China is relatively short on water resources, that water resources and industrialization are intimately related, and that industrialization and urbanization are a major component of China's entrance into the year 2000, it is urgent that we draft a water resource plan to suit national conditions.

This plan must be legislative in nature, and at the same time it must conform to the principles of reduced consumption, expanded sources, and comprehensive management.

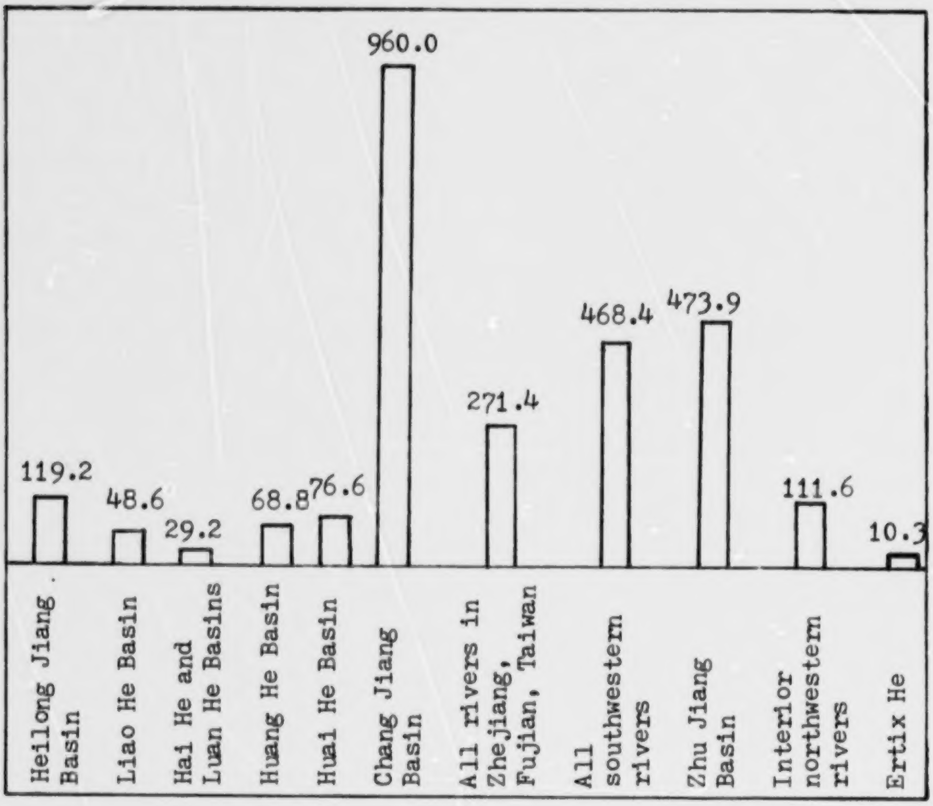
To reduce consumption means to economize on water usage. We must alter the current waste in agricultural irrigation, adopt advanced technology, and prevent or reduce seepage from reservoirs and canals. In irrigation we must change irrational undercalculations of costs and high water-use quotas. According to statistics, in China the actual water utilization coefficient in agricultural irrigation is currently only 0.4 to 0.5. Simultaneously, in industry we must enhance awareness of water economy and improve the industrial water reutilization ratio. In the past few years industrially developed nations all over the world have gone in for industrial water recycling in a big way: in the United States, for example, in 1975 water was reused 2.2 times in the average factory. In addition, we must take firm control of industrial and domestic sewage purification and treatment, amplify and strictly enforce anti-pollution laws, and protect water resources and water quality.

To expand our sources means that we must intensify construction on water resource projects and improve our capacity to divert and store natural runoff. Now the total capacity of reservoirs in China is approximately equal to 16 percent of annual runoff--far lower than the 34 percent capacity in the United States and the 27 percent capacity in the Soviet Union.

Expanding our sources also means that when state and local areas work out economic development plans, particularly when they inquire into the feasibility of carrying out large-scale industrial projects, they must foster an awareness of water resources and refrain from "cooking without water." A look at hydrological features in China shows that water shortages are universal in the north, and water use is "overloaded" some places. The degree of exploitation and utilization of river runoff is nearly 40 percent on the Huai He and the Huang He and as high as 60 percent or more on the Hai He and the Liao He. By contrast, water resources are comparatively abundant in the south. On the "Golden Watercourse," the Chang Jiang, for example, the exploitation and utilization rate is only 16 percent. Moreover, the Chang Jiang boasts various tributaries, extended through-navigation mileage, abundant water volume, slight seasonal changes, and the advantages of irrigation, power generation, and shipping gathered all in one body. One-third of the population of China and 38 percent of China's gross value of industrial and agricultural output are concentrated there. How we further develop the Chang Jiang and help this huge eastern giant to climb to rank with golden industrial corridors such as the Mississippi, Rhine, and Volga Rivers can be called the key to success or failure in China's bid for modernization. From another angle, transregional water diversion is enormously expensive and technologically difficult, and it may bring about consequences for ecological and hydrological equilibrium that are very difficult to assess. Consequently, in terms of resource benefits or economic benefits it is far better to locate new power stations, iron and steel projects, and petrochemical works, which consume a large volume of water, on the banks of the Chang Jiang than to divert water from the south to the north.

Comprehensive management means we must destroy departmental separatism and regional separatism and comprehensively exploit all the natural resource characteristics that inhere to water, such as transportation, power generation, irrigation, flood control, land reclamation, ecological equilibrium, water and soil conservation, afforestation, and industrial development. We have gradually come to understand that, when exploiting a natural resource, if we do not examine and consider all factors, in the end we may be severely punished by Mother Nature. There are many examples of .uj off

Graph 1. Volume of River Runoff in China (in billions of stere)



comprehensive management abroad that we can use for reference. For example, the United States promulgated the "Tennessee Valley Development Act" in 1933, and also established the "Tennessee Valley Authority (TVA)," and thus used law and organization to ensure that a comprehensive management ideology was carried through. Through several decades of unremitting efforts, the TVA finally transformed a "demon river" into a "tame and docile cat," established a flood-control system and developed transportation on an extensive scale, and, within the limits permitted by floodwater regulation and irrigation, developed power generation, land reclamation, and industry to the fullest degree.

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CSO:4007/429

FEED, LIVESTOCK INDUSTRY COORDINATION EXAMINED

Beijing JINGJI RIBAO in Chinese 24 May 86 p 3

[Article by Lin Xingru [2651 1748 1172] under the rubric "Investigative Report": "The Current State and Prospects for Lateral Coordination Between the Feed Industry and the Livestock Breeding Industry"]

[Text] Strengthening lateral connections is a significant problem in socialist economic reform in China. The question of how to relate and integrate the feed industry with the livestock breeding industry must now become part of our quest to improve progress and experience. According to preliminary investigations, the current forms of lateral coordination are roughly as follows:

1. Individually or in combination with the departments concerned, feed companies lend support in many ways to specialized livestock-breeding households to develop production. This pattern is relatively widespread and operates through various methods. In some cases companies and specialized households sign contracts: a deadline is set for feed supply, quality and improved productivity are guaranteed, excess earnings are divided, and, when production is not up to standard, losses are compensated. Some companies and specialized households engage in joint management, supply feed in advance, and proportionally divide after-sales earnings. Some companies ally with veterinary medical stations or food supply centers and enter into joint management with specialized households. Respectively, the parties are responsible for feed, disease prevention and control, and product purchasing. Final earnings are divided proportionally.

2. Feed companies unite with agricultural and animal husbandry departments, food product companies, supply and marketing cooperatives, commune and brigade enterprises, or large specialized households to jointly operate feed lots or processing plants. Among several units, each attends to its own job and profits earned are divided proportionally according to joint management contract provisions. This kind of joint management pattern has been

accomplished dynamically in Zhejiang's Xiaoshan and Deqing Counties, and the pattern of "two responsible parties and one means of support" has also been very successfull in Wan'an County Jiangxi.

3. Feed companies ally with township enterprises to support individual livestock-breeding households, and, based on scientific breeding methods, improve the feed and expand livestock and poultry production. Measures adopted in this kind of alliance differ from place to place according to local conditions. For example, in the cities of Nanping and Sanming in Fujian, it is the feed companies that provide the formulas to guide township enterprises in producing feed concentrates. These are supplied to specialized households, and livestock-breeding households then add the feed concentrates to their own choice coarse green fodder, thus improving the overall nutritional value of their own fodder ingredients. In comparison with the old method, this method generally shortens by 2 months the time needed to raise a hog, and it may increase income by 20 to 30 yuan. In Jiangsu's Hai'an County the feed companies supply the formula to guide farming households in compounding the fodder themselves, and simultaneously they provide supplementary feed. This has also significantly improved economic results. This pattern of lateral connections, which farming households find easiest to accept, is beginning to be adopted by many regions nationwide.

4. With the feed companies as the dominant factor, and in coordination with food products companies, support is offered to village-operated specialized breeding farms (or specialized villages) which meet requirements. The feed companies provide feed and technical guidance and the food products companies purchase the products. The investment in specialized farms is backed by the local government and certain subsidies are provided by the government in case of losses. The city of Nanping in Fujian operates 9 such specialized hog-breeding villages, and in 1984 the commodity pork they supplied accounted for two-thirds of all pork on the market.

5. Feed companies ally with agriculture and animal husbandry departments and with county governments to jointly operate large, multi-purpose, coordinated supply and marketing enterprises such as Beijing's Dafa Company. This company has invested jointly with the Beijing Municipal Food Bureau, the Beijing Municipal Animal Husbandry Bureau, and Shunyi County, and they are now preparing to establish large farms for raising table chickens, conducting primary chicken breeding, and raising lean-meat hogs. They are also about to construct a large feed processing plant and they are getting ready to set up a livestock and poultry product processing plant. For some of these the capital, equipment, improved breeds, and technology were introduced from abroad and the facilities are managed jointly with overseas enterprises. The feed companies will also be entering into joint operations with collective and individual feed lots.

6. Feed companies, individually or in conjunction with departments of agricultural science and technology, join in state-run feed lots. The major purpose is to test the quality and results of experimental feeds, and some commercial production is also carried on to make up for losses incurred in experimental breeding.

Experience has amply verified that the types of lateral coordination described above bring remarkable economic and social results. The first three forms place the focus of attention primarily on the many specialized and key livestock breeding households, and are completely in keeping with current basic conditions in China's livestock industry. These kinds of coordination expend relatively little in funds, manpower, and material resources, and on the foundation of existing feed and livestock they bring rather striking results within a fairly short period of time. Suitable conditions are recessary for the coordinated, large-scale, multi-purpose domestic and overseas lateral associations of Beijing's Dafa Company. From a long-range perspective, experimentation with this kind of enterprise can bring good economic results, but it requires a major investment in funds, materials, and human resources, and is very difficult to disseminate.

Based on China's national conditions, we should adopt the appropriate form to organize the various existing departments, regions, enterprises, and many villages with the relevant economic forces of the livestock and feed industries to develop lateral coordination. We should gradually create economic associations encompassing different regions and different forms of production, processing, transport, supply, and marketing. And, we should promote commercialization, industrialization, and scientific development in the livestock breeding industry.

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CSO: 4007/432

FISHERY PRODUCTION FACTORS, IMPROVEMENTS ANALYZED

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese 23 May 86 pp 12-14

[Article by Huang Keyi [7806 0344 5030] and Li Yanliang [2621 1750 0081], Aquatic Products Bureau, Ministry of Agriculture, Animal Husbandry, and Fishery: "An Inquiry into the Current State of Production Conditions in Chinese Fisheries and Means of Improving Them"]

[Text] Part I

In the 30-plus years of construction since the founding of the People's Republic of China, great changes in production conditions have taken place in Chinese fishery. As of 1984 China had 152,000 motorized fishing boats, with a total of 4,904,000 horsepower. This constitutes a 663.5-fold increase in boats and a 173.2-fold increase in horsepower over 1951, and it is a 220 percent and 70 percent increase, respectively, over 1978. Fishery is now beginning to employ some cold storage, where previously there was none. In 1985 there were 370 state-run cold storage facilities of all sizes in China, possessing a freezing capacity of 250,000 tons at a time, a quick-freeze capacity of 8,000 tons at a time, and a refrigeration capacity of 7,000 tons/day. These figures are 2.7, 1.7, 1.8, and 0.75 times greater, respectively, than corresponding figures from 1975. In addition, fishing harbor and pier construction and fry, fish seed, and fish feed production capacities have expanded correspondingly. Many fishing boats have added advanced fishing navigation equipment: radar, echographs, locator instruments, intercommunications equipment, and satellite navigation apparatus. The aquatic products processing industry is gradually developing: just after the founding of the PRC the only processing machines we had were fish-meal and cod-liver oil units, but, by contrast, we are now equipped with fish cleaning, beheading, skinning, and filleting machinery; machinery for shelling all sorts of shellfish and decapod crustaceans; drying machinery; and assorted machinery for handling and processing fish, shellfish, and aquatic plants.

Improvements in fishery production conditions have accelerated the growth of fishery production. In 1985 the gross national output of aquatic products totalled 6.97 million tons--5.2 times more than in 1951 and 50 percent more than in 1979. Marine products constituted 4,152,700 tons of this gross output, representing 409.6 percent more and 32 percent more, respectively, than in 1951 and 1978, and freshwater products composed 2,814,000 tons, or 4.4 times and 1.7 times more, respectively, than in 1951 and 1978.

Although in quantitative terms fishery production conditions in China have developed significantly, in qualitative terms we still lag behind, particularly in the need to accelerate growth in fishery production. Our fishery base is weak and seems unequal to the task. First, fishing boats, which are the major means of production in marine fishing, are still quite backward. Right now 560,000 unmotorized fishing boats remain in China, for a total tonnage of 887,000 tons, or 1.58 tons per boat. Some 114,900, or 75.3 percent of the total number of motorized fishing boats, have less than 20 horsepower. In addition, on-deck machinery and fishing navigation equipment are not up to standard and fishing operations are still done largely by hand. We are only capable of coastal and inshore production, and cannot make full and effective use of China's broadly distributed, abundant, diverse aquatic resources. For example, anchovy resources are exceedingly abundant in Chinese marine waters, but because fishing nets, tools, and processing facilities do not meet needs, as of today we are still unable to make good use of the resources and can only leave nature to run its course respecting them. For another example, small fishing boats, low-performance on-deck machinery, backward fishing navigation equipment, and an extremely weak deep-sea fishing capacity restrict the degree to which we can exploit and utilize foreign marine waters and deep-sea resources.

Second, we only exploit and use 20 percent of China's available shallow marine shoals and mudbanks. Not only is this a low utilization ratio, the vast majority of our development and exploitation is through extensive, low-yield cultivation. Culture pond construction standards are low, facilities are simple and crude, and the degree of mechanization is low. In 1985 the average per-unit yield from 1,011,000 mu of shoal and mudbank area under our management nationwide was only 18.5 kg, about 11 percent of the average marine culture output across the nation and 1 to 2 percent of the high yields obtained in some intensively cultured areas. Because we do not fully develop and make use of shallow marine shoals and mudbanks, and because what we already utilize is under extensive management, although marine culture output in 1985 broke a record high it only acounts for 10 percent of the total quantity of aquatic products nationwide.

Third, some 40 percent of the possible freshwater culture area is still not developed for our use. In northwest China 80 percent of the possible aquatic breeding area is still awaiting development, and most of what is developed is in shallow, infertile ponds with uncertain water supplies, so output is low and unstable. Where aquatic breeding has been developed in rivers, lakes, reservoirs, and outer marshes, facilities are simple and crude and yields are low. In 1984 nationwide fish culture produced an average of 13 kg per unit in lakes, 30.5 kg per unit in streams, and 9 kg per unit in reservoirs.

Fourth, fish-feed processing facilities are seriously inadequate and fish feed supplies do not meet demand. In 1985 there were only 65 processing plants in China producing blended fish feed, and they processed a total of 200,000-plus tons of fish feed. This falls seriously short of actual demand and is far from sufficient to meet aquatic breeding production needs. In Guangdong, where pelletized bait has been popularized for raising fish, in 1984 1.57 million mu of ponds were used for fish breeding, but blended feed was used in only about 100,000 mu. Blended feed accounted for only 10 to 15 percent of the concentrated feed used. Now feed supplies are increasingly becoming a limiting factor in production growth. In aquatic breeding, an insufficient feed supply limits rapid production growth and poor quality or unsuitable feed results in an inability to produce high yields. In the final analysis both factors affect aquatic breeding output and economic results. In 1985 Zhejiang's Daishan County cultured prawns in 8,155 mu of water area. During the early period prawn production was excellent, but during the later period feed supplies ran out and many units went without bait for many days. Many of the prawns starved to death or preyed on each other. Some units had no choice but to use small packages of table seafood products to feed the prawns, and this hiked the cost of prawn culture tremendously.

Fifth, fry culture cannot keep up with the needs of production growth. If we calculate intensive culture, high yields, and fry seeding for the current aquatic breeding water area, the demand for fry must be multiplied several times at least. Our fry production capacity is weak and distribution is inequitable--in some regions fry shortages are severe. In 1985 Zhoushan and Ningpo bought and transported 200 million prawn fry from Shandong and Zhejiang, and then could just barely meet culture demands.

Sixth, our freezing and preservation capacity is inadequate and and unsuited to production growth. In 1985 our total ice-making capacity in seafood cold storage facilities was 2.2 million tons, just sufficient to meet about 55 percent of the need for ice in shipboard preservation, transportation, and marketing. Our freezing capacity is approximately 1 million tons, or only enough to handle about 40 percent of the freezable aquatic products. Moreover, during the peak production season ice supplies stand in sharp contrast to the quantity of aquatic products waiting to be frozen.

Seventh, the facilities we have for processing aquatic products are simple and crude, and the packaging we produce is coarse. Salting accounts for 75 percent of our processed aquatic products, and canned, cooked, and small packaged goods comprise only 15 percent. In Japan and the Soviet Union processed food products now account for more than 50 percent of all aquatic products, whereas in China processed frozen products and all other processed food products account for less than 20 percent of all aquatic products. Because processing cannot keep pace, many aquatic products that arrive too late to be preserved senselessly spoil and are thrown away.

Part II

To improve and strengthen fishery production conditions, we must be realistic and adhere to policies that help us adapt measures to local conditions, consider professional differences, and act within our capabilities. We must expand reproduction and follow a route that integrates intension with extension. In addition, our principle must be to make reasonable use of natural resources, and we must pay particular attention to economic, social, and ecologic results.

1. In improving and strengthening marine fishing conditions, our principle must be to exploit and utilize fish resources in a reasonable fashion. We must use our primary financial, material, and technical resources to replace and remodel existing fishing boats and to make equitable readjustments in the composition of fishing methods. In China the composition of fishing fleets and the structure of operations in fishery production are both irrational. First, there are many fishing boats engaged in trawling and fixed netting operations, and these operations are carried on for too long a time, resulting in serious destruction to major coastal demersal fish resources (such as large and small yellow croakers). Second, diversified fishing boats and netting gear for purse seining, drift netting, and angling are either scarce or perform poorly, so that as of today we have yet to make reasonable use of rich midwater and epipelagic fish resources or localized, small quantities of variety fish resources that are scattered through all sorts of fishing areas. Consequently, when we improve marine fishery production resources, we must act based on actual current resources, and we must comply with principles that stress restoration of what has been destroyed and exploitation and utilization of what has not yet been utilized or fully utilized. On that foundation, we must first replace and remodel existing fishing boats and netting gear and ensure that, in terms of quantity and fish-catching capacity, they correspond to the possible catch of each kind of resource. Second, in order to meet the demands of increasingly intense fishing, we must adopt release methods and position artificial fish banks to multiply resources and improve the natural growth powers of marine fish. Further, to accelerate expansion of open-sea and deep-sea fishing we must build or import fishing vessels that perform well for fishing and in navigation.

2. Improvement in production conditions for the aquatic breeding industry should be based primarily on the construction of high-yield, intensively cultured fishponds and production support facilities. First, in opening up water areas for utilization, we must insist on a combination of large, medium, and small expanses of water. In large lakes, major watercourses, and the waters of the Chang Jiang, we should implement measures to protect propagation; to effect artificial release, transplantation, and domestication; and to transform environmental conditions. In medium-sized lakes and reservoirs we should carry out a "divide and cultivate" policy, which essentially means to institute enclosed cultures, tube cultures, and intensive cage cultures and to increase artificially controlled factors. As for small bodies of water, we must strive to improve pond conditions, construct ponds to high standards, and put intensive culturing into effect. Second, in developing shoals and mudbanks we must integrate intensive and extensive methods, comprehensively develop fish, shrimp, shellfish, and aquatic plants, and gradually increase the proportions of fish, shrimp, and marine treasures. Third, we must work hard to develop fry production and establish a healthy fry system. In fry breeding the main thrust of our efforts must be to increase variety; raise numbers, standards, and quality; disseminate well-known, special, and outstanding new varieties; and meet the demands of rapid growth in marine and freshwater aquatic breeding industries. Fry production calls for comprehensive planning, rational distribution, and the adoption of diversified breeding measures based primarily on fishpond breeding and supplemented by breeding in paddy fields, net cages, and encircling pens in

outer fishing areas. We should as quickly as possible set about improving, standardizing, and systematizing fry production. Fourth, we should work hard to expand feed production and establish a fish-feed supply system. In light of the current state of fish-feed supplies in China, we must continue to use traditional means of resolving fish-feed supply problems: we must integrate fishery and livestock industries, fishery and sidelines industries, animal husbandry and cultivation, and extensive and intensive culture methods. But in addition to this, we must enthusiastically and calculatedly develop pelletized feed in order to supply the material conditions for large-scale, intensive, high-yield aquatic cultures. China encompasses a vast territory and has poor transportation facilities; moreover, the quantity and assortment of fish feed required differs from place to place. Consequently, in establishing fish-feed plants and a fish-feed supply system, we must plan comprehensively and ensure that distribution is equitable.

3. In improving preservation and processing conditions for aquatic products, we should put into practice the principle of preserving freshness and maintaining value while multiplying processing and ensuring multipurpose utilization: we should construct complementary facilities. Preserving freshness and maintaining value in aquatic products is one of the major keys to fishery production. For this reason, we must first secure the frontline of production: freshness preservation. In marine fishery we must by turns combine replacement with remodeling to completely re-equip freezer facilities. On motorized fishing sailboats we must also combine replacement with remodeling to install thermal insulation and heat preservation in cabins so that we can carry ice on production runs. Where conditions are right we must also install shipboard freezer facilities. In freshwater fishery zones we must primarily succeed in keeping the catch alive. To incorporate product circulation we must add additional live and fresh storage and transport facilities. Secondarily, we must augment construction on freezer facilitites to raise freezer capacity and improve our ability to supply ice. We should plan comprehensively and ensure that distribution is equitable, and on that basis we should encourage collectives and individuals to construct medium and small freezers--particularly small, assembled, mobile freezer compartments--to be used in addition to those constructed by the state. Similarly, we must concentrate on constructing facilities to produce small packaging, convenience foods, and conventionally flavored foods. In order to meet the needs of industry growth in the seafood preservation and processing, we must focus on innovative renovations in processing machinery and technologies and expedite change in the backward state of this industry in China.

4. In the circulation of aquatic products, we must concentrate on improving circulation conditions: we must construct facilities for cold storage, cold shipment, and live shipment of goods from the producing area to the market area; we must construct wholesale trading markets for aquatic products; and we must succeed in preserving freshness, maintaining live catches, circulating goods through fright yards, satisfying market needs, distributing goods evenly to market, making consumption convenient, and promoting production.

Improving fishery production conditions and using advanced technical equipment to outfit the fishing industry is one of the focal tasks stipulated in the 1986 Party Central Committee Circular No 1. It is a further strategic measure to promote growth in fishery production. Consequently, we must first focus our attention, work out our plans, and make comprehensive arrangements. Then, on funding issues we must uphold the principle of combining state, collective, and individual efforts. We must actively initiate social fundraising, bring in foreign capital, and also utilize our every advantage to develop diverse forms of economic associations: 1) We must engage in compensation trade and set up joint operations with foreign and Hongkong traders; 2) We must set up joint operations with sectors outside the aquatic products industry; 3) We must initiate joint labor-capital operations. In summary, through efforts to develop diverse forms of economic associations we should expand our sources of capital to improve fishery production conditions and develop the productive forces in the Chinese fishing industry.

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CSO: 4004/442

AQUATIC PRODUCTS INDUSTRY GROWTH WILL CONTINUE

Beijing LIAOWANG [OVERSEAS EDITION] in Chinese No 22, 2 Jun 86 pp 17-18

[Article by Zhang Zichen [1728 1311 5256] and Gao Yinuo [7559 0110 6179]: China's aquaculture will continue to make big advances]

[Text] The fisheries industry set goals for 1990 on the basis of experience gained during the Sixth 5-Year Plan for the Chinese national economy at a conference of the heads of aquatic products bureaus held not long ago. Production of aquatic products will increase at an average annual rate of 6.7 percent to 9 million tons in 1990, double the production of 1980. Average per capita aquatic products consumption will reach 8 kg and the problem of "fish are hard to get" in the big cities will be solved gradually,a area by area. The consumption of aquatic products in 46 of these cities will rise 47.5 percent from 13 kg per capita in 1985 to 19.25 kg per capita. The total value of aquatic product production (including the processing industry) will rise an average of 12.1 percent annually to 14.87 billion yuan.

China will take these important measures in order to continue to create a new situation in the aquatic products industry:

--We will evaluate the potential of China's 18.000 km coastline, its 2.2 billion mu of offshore fisheries, and more than 500 million my suitable for pisciculture, such as shallow seas, shoals, river channels, lakes, reservoirs, pools, and rice paddies. We should depend on commercial fisheries in the suburbs of the cities and on intensive aquaculture areas to supply the needs of the cities. We should establish commercial export bases dedicated to products which are famous, local specialities, of excellent quality, or new. We should increase our production of products in which we are competitive such as shrimp, river crab, eel, and Tilapia mossambica.

--We should take advantage of technical breakthroughs which improve aquatic product preservation and quality. The market should be supplied with fresh fish, frozen fish, frozen small packages of aquatic products, and fish products which can be simply heated and consumed, as well as some high-quality products for the international market.

--We should develop the deep-sea fishing industry. The fishing bases we have in West Africa and the bases we have just established in North America need to be strengthened and gradually expanded. We need to gain a foothold in South America and in Australia as well. We must strive for profitability and arrange to market some of the fish caught long distances from home in China.

--We should improve management of the market. We should gradually improve regulations on management of the market, price guidelines, and quality inspection. We will improve and diversify the channels of distribution, reduce the number of intermediate links, work toward on open system of distribution, rationalize all types of relationships, and work toward the twin goals of openness and good management.

The Overall Benefits of the Policy

Since 1979, China has gradually turned away from its tendency to stress quantity and making light of quality, to stress catching fish while making light of breeding and raising fish, and to stress the ocean while ignoring freshwater. Thus China's aquatic products industry has been able to develop in a distinctly Chinese way.

In 1985, Chinese aquatic products production reached 7,052,000 tons, an increase of 57 percent over the 4.49 million tons of 1980. Chinese per capita aquatic products production increased from about 4 kg to 6.8 kg in 1985.

China has made developing the aquatic products industry an important strategy to adjust the structure of production in the countryside. Economic policy is the lever which moves this readjustment. The decontrol of prices greatly encouraged people to work in the aquatic products industry. In many areas people combine pisciculture with agriculture because of limited land. They dig fishponds and repair terraced fields, raise shrimp and salt fields and fish in rice paddies. Statistics reveal that last year peasants throughout China dug more than 3 million mu of new fishponds in low-lying marshy areas, beaches, coal pits, etc. The total area of rice paddy used for pisciculture grew to 15 million mu. Leting County in Hebei Province, which was not even on the list of counties raising shrimp and crabs before 1984, by increasing the area of its shrimp ponds by 20,000 mu during 1985 boosted production to over 1,000 tons. It suddenly became one of the nine advanced counties with annual shrimp production over 1,000 tons.

During the Sixth 5-Year Plan (1980-1985) the basic accounting units of the fishing industry were made smaller and the production responsibility system began to bear fruit. Two-thirds of ocean fishing enterprises use individual boats as their basic accounting units. One-third of the contract profits goes to the boat. In seawater and freshwater fish-raising operations contracts are usually assigned to households, organizations, or to a joint management body combining the two. This has not only moved the aquatic products industry forward but has also rationalized the aquatic products product mix.

The decontrol of prices, the adjustment of the market, the creation of an open structure of distribution with more channels, and fewer intermediate links has made the favorable trend of being attentive to market demand, product diversity, and quality, and no longer one-sidedly stressing quantity appear among fishermen. This has made it possible to establish fishery bases specializing in products which are famous, local specialities, superior quality or novel for export. In ocean fish breeding, for example, the proportion of superior-quality fish and shrimp increased from 1.7 percent formerly to 9.3 percent. Particularly along the coast an unprecedented "enthusiasm for raising shrimp" has arisen. The shrimp-cultivating area and shrimp production have been multiplying year after year.

Moreover fisheries legislation and regulations have been strengthened. More than 70 fisheries management specialists throughout the country protect fishery resources, guarantee product safety, and preserve orderly production and the profits of producers.

The Role of Advances in Science and Technology

Science and technology play an important role in developing new varieties, in raising production and in improving product quality. Progress in science and technology has tripled the average Chinese per mu shrimp harvest from 10.05 kg in 1979 to 40 kg. In Jiangxi Province and other areas where fish are intensively cultivated in pens, the high production pisciculture of the fishponds has been transferred to medium and large surfaces of water. Average per-mu production is 150 kg although in some areas it exceeds 500 kg. The profitability of pisciculture in Changdao County of Shandong Province where several layers of the water simultaneously are used simultaneously, with kelp at the surface, scallops and mussels in the middle, and sea cucumber, abalone, giant algae, and sea urchine at the bottom leads the entire nation.

The S&T sector of the Chinese aquatic products industry has earned a leading position in world science by producing the world's first "loach bred with artificial sperm," raising the world's first 'test tube fish," developed technology for growing fish cells and produced the world's first "artificially induced fish alloguadrapoid."

Characteristics of Chinese Developments

The development of the Chinese fishing industry during 1985 had these particularities:

--As the number of varieties of processed aquatic products has increased production, both the quantity and quality of sea products have risen. Since last year, China has begun to value the preservation of aquatic products equally with their production. Both national enterprises and enterprises run by the masses have made new progress, especially in packaging and in refrigeration containers for fish so that frozen and processed raw fish production (excluding salted fish products) exceeds 1.2 million tons annually. State fishing enterprises and individual fishermen alike have recognized that preservation processing is an important advance for the aquatic products industry and consider it an important measure for moving the aquatic products industry forward.

--The mechanization of the fishing industry is being strengthened. In 1984 the number of motorized fishing vessels in China reached 185,000 with more than 550 million horsepower, an increase of 30,000 vessels and 600,000 horsepower over 1983. The deep sea motorized fishing fleet of Fujian Province increased the most, adding 131,000 horsepower. Guangdong Province and Zhejiang Province added 110,000 and 90,000 horsepower, respectively.

--Freshwater pisciculture is expanding to large and medium-size bodies of water. According to statistics they account for 70 percent of the water surface in the interior of mainland China but only account for 22 percent of freshwater pisciculture. Thus large and medium-size bodies of water are a resource which should be exploited immediately. Some areas have already set up experimental stations to study this problem. Suzhou City has, since the establishment of an experimental station at Xilian Village in Wujiang County in 1980, increased the 147,000 mu of Suzhou City's fishponds on the periphery of large and medium-size bodies of water by 1985. Areas with productivities of 500 and 250 kg per mu are over 1,000 mu and nearly 10,000 mu in size. Sometimes several tens of thousands of kg of fish are in one net. Fish of superior quality usually comprise 50 to 60 percent of this figure by weight. Today China has made developing freshwater pisciculture in large and medium-size bodies of water an important goal. By the end of the century the proportion of freshwater fish in total fish production should increase from 40 percent at present to 60 percent.

--Study advanced forms and methods of world pisciculture. India, which has the second largest freshwater pisciculture production in the world, uses the method of fish farming in small ponds in large bodies of water to achieve an average per mu yield of 77 kg and a high per-mu yield of 1 tone. During the 1970's Japan adopted similar methods and achieved per-mu productivity of 630 kg, quadrupling pisciculture pond production in 7 years. Some people involved in aquaculture believe that China has basically mastered the newest method used in world pisciculture--producing fish within a net. With just a little more effort the area under freshwater cultivation will double to 6.6 million mu.

--Chinese villages to move further toward producing for the market should develop and adjust their product mix. More and more peasants and peasant households are turning to pisciculture. At the end of 1985, Chinese peasant household pisciculture had expanded to 5,475,600 households cultivating a total water area of 4.5 million mu producing 240,000 tons of fish annually. Moreover, there were more than 420,000 households specializing in the cultivation of ocean and of freshwater fish, an increase of more than 40,000 households over 1984, producing 435,900 tons of fish annually.

Many Chinese household engaging in pisciculture have become wealthy. According to surveys and statistics on 2,614 households engaged in pisciculture in 86 counties the average annual household income was 5.535 yuan, 1,918 yuan greater than the average earning of 3,617 yuan found in the 1984 survey of 390 households in 13 counties. The average per capita income of people engaged in pisciculture is 1,058 yuan which is more than 2.5 times the average per capita income of all Chinese living in rural areas.

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REFORM PROVIDES FRESHER, MORE VARIED VEGETABLES

OW190808 Beijing XINHUA in English 0714 GMT 19 Sep 86

[Text] Beijing, Sep 19 (XINHUA correspondent Sheng Zuren)--Shoppers in China's produce markets this year are finding agricultural reform has brought them a greater variety of fresher vegetables--at higher prices.

A recent survey showed that in 70 cities and 206 rural areas, farmers sold 39.8 percent more produce to consumers during the first half of the year than in the same period in 1985, according to officials of the state administration for industry and commerce. Although overall totals were not available, the officials said vegetable sales are at an all-time high.

Most of the increase is apparently due to more productive farming and distribution of crops. Vegetable plots increased 9 percent this year to 4.75 million hectares, according to government statistics, but that would not account for the nearly 40 percent jump in market volume.

Economists say the reform has spurred farmers to bring more and higher quality produce to market. In Beijing, for example, the farmers themselves can be seen throughout the city hawking succulent red tomatoes, cucumbers so fresh their yellow flowers remain firmly attached, cabbages, long green beans, eggplants, red and green peppers and heads of cauliflower.

Other vegetables are sold by professional peddlers, who pay as little as they can to farmers and seek as much as they can from consumers.

China's new system offers shoppers a choice. They can ignore the benefits of the reform and continue to buy such basic vegetables as cabbages and potatoes and other seasonal produce in state stores for below-market prices. Although state stores are often crowded at peak hours, their existence guarantees that no one will go without vegetables because of higher market prices.

Consumers able and willing to pay more can buy from the private vendors, who often feature the freshest vegetables available and spruce up their goods to attract customers. Private vendors also sell food no longer in season at premium prices.

In addition to stocking such staple produce as cabbage at low cost, state stores help stabilize free market prices by offering an alternative to shoppers.

In a country where people say "vegetables and beancurd keep the body healthy," vegetables are served at nearly every meal. On the average, people in China eat 0.5 kilograms of produce daily.

Before the reform, the government controlled vegetable production as well as wholesale and retail sales. Farmers planted crops according to government quotas, then transported the produce themselves to state purchasing stations where they were paid according to set prices. The vegetables were then hauled to state stores.

Because the government wanted farmers to grow such staples as cabbage and potatoes, there was rarely much variety available to consumers. At the same time, according to critics of the old system, hauling vegetables first to the state purchasing stations and then to state markets caused excessive spoilage and crop damage.

To keep state store prices low, purchasing agents paid low prices to farmers, and government authorities sometimes had to subsidize transportation costs to keep the farmers afloat. The city of Shanghai alone spent 85 million yuan (23 million U.S. dollars) in 1984 on such subsidies.

Under the current system, farmers are assigned plots of land and can grow whatever they want, depending on their sense of the market. But many continue to sell at least part of their crops to the state at fixed prices, guaranteeing themselves a minimum return and avoiding having to deal with peddlers or selling the vegetables themselves.

A recent government survey of markets in Shanghai, Shenyang, Tianjin, and Wuhan showed that since the reform the number of different kinds of vegetables had doubled to 40.

In Guangzhou, according to the survey, thanks to the reform there are at least 30 kinds of vegetables on the market every day. Even in the agricultural off-season in Beijing, the survey found, shoppers willing to pay market prices can buy any amount of fresh long green beans, tomatoes, green peppers, and cucumbers.

While it is hard to find a consumer who will complain about the variety of vegetables available, some do grouse about the prices.

Prices for the same vegetable vary according to such factors as quality and the shrewdness of the vendor. A survey of markets in major cities throughout the country earlier this month found tomatoes priced at 16 to 70 fen (4 to 19 U.S. cents) per kilogram, green peppers at 40 to 60 fen (11 to 16 cents) per kilogram, and cucumbers at 32 to 40 fen (9 to 11 cents) per kilogram.

A leading official of the state industry administration told XINHUA he agreed that some of the prices were "a bit high" considering the average base salary of urban workers of 100 yuan a month.

But, he said, "Higher prices encourage the farmers to provide vegetables of higher quality, and in any case the state market system continues to offer produce at prices everyone can afford."

In time, he argued, the market system would itself regulate vegetable prices by encouraging farmers to grow more.

"If we give the market a chance, we can count on supply and demand to stabilize prices at a reasonable level," the official said.

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CSO: 4020/6

DAILIES REPORT ON DIMINISHING FORESTRY

Daily Reports Warnings

HK230133 Hong Kong ZHONGGUO XINWEN SHE in Chinese 1136 GMT 22 Sep 86

[Report: "China's Diminishing Forest Resources Arouse Concern"--ZHONGGUO XINWEN SHE headline]

[Text] Beijing, 22 Sep (ZHONGGUO XINWEN SHE)--People are worried by China's diminishing forest resources. According to a statistical report, of the country's 131 forestry bureaus, half have had too many trees felled from the forests under their jurisdiction and 25 have exhausted their forest resources. About two-thirds of the country's forestry bureaus will have no trees to fell in 15 years.

According to a survey conducted by the Ministry of Forestry, between 1978 and 1981, the area covered by forests in China dropped from 12.7 percent to 12 percent of the country's total area. In recent years, forest resources have diminished even more quickly. According to an analysis made by some forestry experts, if nothing is done to remedy the situation, China's forests will diminish by 0.9 percent every 5 years as a result of population growth and economic development.

An official of the Ministry of Forestry suggested that as a result of our erroneous policy regarding our forestry economy, which has been in effect for a long time, and of the unreasonable timber prices, too many trees have been felled. In some parts of the country, people arbitrarily fell trees. This is why the country's forest resources are diminished.

According to this official, China is a country with few forests. At present, it has 110 million hectares of forests. The percentage of land covered by forests in China is below world average. Thus, preserving forest resources is an urgent and formidable task.

He said: In order to effectively preserve forest resources and to prevent people from arbitrarily felling trees, various localities have strengthened the enforcement of forestry laws. According to the statistics of 19 provinces, in the first half of this year, more than 30,000 cases of damaging forests were handled and more than 20,000 cubic meters of timber was confiscated. People involved in serious cases have been punished by both economic and administrative means.

Illegal Loggers Continue To Cut Reserves

OW230800 Beijing XINHUA in English 0741 GMT 23 Sep 86

[Text] Beijing, Sep 23 (XINHUA)--Illegal logging continues to cut China's forest reserves, the overseas edition of the "PEOPLE'S DAILY" reported today.

Quoting a Ministry of Forestry official, the communist party paper said China's forests dropped from 12.7 to 12 percent of the country's land between 1978 and 1981, and "the problem has been accelerating in recent years."

By international standards, China's 110 million hectares of forests are a scarce resource.

Combined with population growth and economic development, the percentage of forest land in China will drop 0.9 percent every 5 years--unless the illegal logging is stopped, the official said.

He said the government was taking "effective measures" to stop the pilfering of the nation's trees. During the first half of the year, provincial governments had prosecuted 30,000 cases of illegal logging, according to the official, confiscating more than 20,000 cubic meters of wood and fining those involved.

"Protecting our forests is urgent, but it's difficult," he said.

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CSO: 4020/6

BRIEFS

RURAL INDUSTRY EXPORTS--Beijing, 18 Sep (XINHUA)--China's rural industries now export 3,000 varieties of goods worth nearly 4 billion yuan (about 1.1 billion U.S. dollars) each year. Output value of native products, animal by-products and foodstuffs rose to 11.4 billion yuan (3 billion U.S. dollars) last year. Among foodstuffs increasingly popular on the international market are vermicelli made from bean starch, soy bean products, preserved eggs, and liquor. [Text] [Beijing XINHUA in English 0640 GMT 18 Sep 86 OW] /9599

AGRICULTURAL PRODUCT AREAS DESIGNATED--Beijing, 19 Sep (XINHUA)--China has designated five agricultural product areas for grain, cash crops, forestry, animal husbandry, and aquatic products, according to today's "PEOPLE'S DAILY." Most of China's plains including those in Hunan, Sichuan, Hubei, Anhui, Jiangxi, and Heilongjiang provinces make up the grain producing sector, the paper said. The cash crop production area, the largest area including many corners of the country, encompasses those areas producing cotton, peanuts, oil-bearing crops, fruits, tropical and sub-tropical produce, rubber, and coffee. The production area for forestry lies in northeastern and southwestern China, with northern Heilongjiang Province and northern Xinjiang Autonomous Region as the centers for cattle, horse, and fine-wooled sheep raising. Coastal areas are the centers for marine fishery activities including the cultivation of marine fish, prawns, and shellfish, the paper said, adding that the largest lakes in China are bases for the cultivation of fresh water aquatic products. [Text] [Beijing XINHUA in English 0806 GMT 19 Sep 86 OW] /9599

NEW COTTON STRATEGY--Shanghai, 22 Sep (XINHUA)--A senior Shanghai scientist has developed a new strategy for using manure in cotton fields that has increased farmers' incomes by 100 million yuan (27 million U.S. dollars) over the last 3 years. Developed by 72-year-old Tang Yuwei of the Shanghai Research Institute of Plant Physiology, the strategy involves cutting the amount of manure used on young cotton and increasing the fertilizer as the cotton blooms. Authorities at the Chinese Academy of Sciences in Beijing, which oversees the Shanghai institute, say farmers who take advantage of Tang's idea have raised their per hectare output of ginned cotton 20 percent while cutting their use of manure by one-third. Farmers have been using Tang's method on 400,000 hectares in east and central China. [Text] [Beijing XINHUA in English 1151 GMT 22 Sep 86 OW] /9599

CITRUS FRUIT OUTPUT--The estimated gross output of citrus fruit in the 8 major producing provinces is over 2 million tons, an increase of 23.3 percent over last year. Estimated output for Sichuan is 650,000 to 750,000 tons, an increase of 16 to 25 percent over last year. Estimated output in Fujian is about 120,000 tons, a 12 to 16 percent increase over last year. Estimated output for Hunan is 275,000 tons, an increase of 95 percent over last year. Estimated output for Guangdong is about 300,000 tons. Estimated output for Zhejiang is 300,000 tons, a 5 percent increase over last year. Estimated output in Guangxi is 150,000 tons, a 9 percent increase over last year. Estimated output for Jiangxi is 90,000 tons, a 30 percent increase over last year. Estimated output in Hubei is 84,000 tons, a 10 percent increase over last year. [Excerpts] [Chengdu SICHUAN RIBAO in Chinese 11 Sep 86 p 2]

AGRICULTURAL MONITORING NETWORK--Beijing, 12 Sep (XINHUA)--China's agricultural environmental monitoring network has been initially completed. According to the Ministry of Agriculture, Animal Husbandry, and Fisheries, the agricultural environmental monitoring center located in Tianjin went into operation recently, playing a leading role in the network. Currently, there are 25 monitoring stations at provincial level throughout China. Some provinces, municipalities, and autonomous regions have set up monitoring stations at prefectural, city, and county levels. [Excerpt] [Beijing XINHUA Domestic Service in Chinese 0542 GMT 12 Sep 86 OW] /9599

EXPERTS ON HERBICIDES--Beijing, September 16 (XINHUA)--Chinese agronomists are asking farmers to use more chemical herbicides on the country's 40 million hectares of weed-infested farmland, the overseas edition of the PEOPLE'S DAILY reported today. The Communist Party paper said the weed problem has been costing China 17 million tons a year in lost grain production and has forced farmers to devote five to six billion working days a year to weeding. "Chemical herbicides can increase the productivity of both farmers and farmland," it said. According to the agronomists, chemical herbicides were used on 8.67 million hectares of farmland in 1985 and may be used on as much as 35 million hectares by 1995, the paper said. [Text] [Beijing XINHUA in English 0905 GMT 16 Sep 86] /8309

CSO: 4020/1

PROVINCIAL STATE FARM STATISTICS REPORTED

Beijing ZHONGGUO NONGKEN [STATE FARMS AND LAND RECLAMATION] in Chinese No 4, 24 Apr 86 pp 14-16

[Article: "Sixth 5-Year Plan Achievements Most Heartening"

[Text] Editor's Note: During the Sixth 5-Year Plan, the State Farm and Land Reclamation System diligently carried out the line, programs and policies of the Central Committee, and instituted the three major reforms of responsibility for one's own finances, integrated agricultural, industrial and commercial operations, and the operation of farms by families of employees, scoring most heartening accomplishments in building the economy and in laying a better material foundation for smooth implementation of plans covered by the Seventh 5-Year Plan. The status of fulfillment of the several major targets in the Sixth 5-Year Plan for more than 10 state farm and land reclamation areas appears below. We can easily see from this that though 5 years is but a blink of an eye historically, it has been an important milestone on the journey of all areas in quadrupling the gross output value of industry and agriculture by the end of this century.

GUANGDONG. During the Sixth 5-Year Plan, the gross output value of industry and agriculture in Guangdong Province reached 6.537 billion yuan in a 53.9 percent increase over the Fifth 5-Year Plan. Profits of 825.22 million yuan and 137.50 million yuan in funds to support local construction were realized. Per capita income was 865 yuan in 1985, up 43 percent from 1980.

During the Sixth 5-Year Plan, outputs of major products rose markedly. Gross output of dry rubber was 605,300 tons, up 54.5 percent from the Fifth 5-Year Plan. Gross output of dry tea was 19,730 tons, up 70.3 percent from the Fifth 5-Year Plan. Gross output of sugarcane was 3.266 million tons, up 137.2 percent from the Fifth 5-Year Plan. Gross output of cane sugar was 237,800 tons, up 72.9 percent from the Fifth 5-Year Plan. Gross output of sisal hemp fiber was 3,040 tons in a 48.8 percent increase over the Fifth 5-Year Plan. Gross output of fruit was 66,935 tons in a 237.2 percent rise over 1955. Live hogs totaled 4,947,700 head in a 53.1 percent increase over the Fifth 5-Year Plan. Gross output of cement totaled 768.5 tons, up 156 percent over the Fifth 5-Year Plan period. (Huang Xi [7806 3305])

HEILONGJIANG. During the Sixth 5-Year Plan, Heilongjiang Province diligently carried out a program of readjustment, restructuring, consolidation, and improvement of the national economy in the promotion of comprehensive reform of the economic system for further development of industrial and agricultural production.

Agriculture: During the Sixth 5-Year plan, the gross output value of agriculture was 6.79 billion yuan. A total of 11.99 million tons of grain and pulses with 5.615 million tons being turned over to the state.

Animal Husbandry: The number of large livestock animals in inventory totaled 98,500 in 1985 for a 10.7 percent increase over 1980. This included 33,700 head of dairy cows at the end of 1985, twice as many as at the end of 1980 for a 24.9 percent average annual increase over the 5 year period. Poultry in inventory at the end of 1985 numbered 4.28 million, double the 1980 figure for a 15.9 percent average annual increase over the 5 year period. Output of milk, a major livestock product, was 54,400 tons in 1985 almost twice as much as in 1980 for a 23.9 percent average annual increase. Fresh egg output for 1985 was 7.544 tons, more than 6 times as much as in 1980 for a 48.9 percent average annual increase.

Afforestation: During the 5 year period, 3,238,000 mu was afforested. This included 1,261,000 mu of farmland shelter forests, or the afforestation of 648,000 mu each year. A total of 30.61 million trees were planted in the four besides [as published], an average of 6.12 million trees per year.

Industrial Production: Gross output value of state-owned industry for 1985 was 976,473,000 yuan for a 46.5 percent rise over 1980, or an average 7.94 percent per year increase. Output value of light industry was 418,236,000 yuan in a 41.9 percent increase over 1980 for an average annual 7.25 percent increase.

Gross output value of industry and agriculture for 1985 was 2.4 billion yuan, up 14.8 percent over 1980. (Gao Shuhua [7559 3219 5478] and Liao Qingzhen [1675 1987 4394])

TIANJIN. During the Sixth 5-Year Plan, Tianjin state farm and land reclamation enterprises focused on making the most of advantages in farm resources, playing up strengths and playing down weaknesses in vigorous development of non-staple food and food processing industries to serve the city, achieving rather good results thereby.

The gross output value of Tianjin's industry and agriculture for 1985 was 235,653,400 yuan for a 205.13 percent increase over 1980. Profits totaled 33.6 million yuan, up 255.02 percent from 1980, and per capita income was 1,083 yuan, up 47.55 percent from 1980.

Output of major products increased tremendously during the Sixth 5-Year Plan. In 1985, gross output of green fodder was 57,650.75 tons, up 21 percent from 1980. Gross output of cow's milk was 35,875 tons, up 65.13 percent from 1980. Gross output of chicken eggs was 9,079.35 tons, up 1,419.81 percent from 1980. Gross output of fruits was 5,658.5 tons in a 77.18 percent increase over 1980. Gross output of wine was 8,761.4 tons, 732.02 percent more than in 1980. (Qin Pengzu [4440 7720 4371])

XINJIANG. During the Sixth 5-Year Plan, the gross output value of Xinjiang's industry and agriculture increased by an average 12.8 percent annually. In 1985, the gross output value of industry and agriculture was 2.959 billion, up 82.4 percent from 1980. The gross output value of agriculture was 1.336 billion yuan, up 60.9 percent from 1980. The gross output value of industry was 1.623 billion yuan, up 104.9 percent from 1980.

During the Sixth 5-Year Plan, a total of 5.05 million tons of grain, 373,500 tons of cotton, and 249,000 tons of oil-bearing crops were produced. This was respectively 36 percent, 86 percent and 117 percent of the totals for the previous 30 years. This included the production in 1985 of 1,035,000 tons of grain, up 12.1 percent from 1980; 82,745 tons of cotton, up 137.8 percent from 1980; and 86,640 tons of oil-bearing crops, up 113.9 percent from 1980. In 1985 the number of livestock in inventory totaled 2,827,600, up 5.8 percent from 1980. Gross output of sheep wool and goat hair was 7,000 tons, up 22.9 percent from 1980. In 1985, gross output of raw coal was 3,470,200 tons, up 39.5 percent from 1980; and gross output of cement was 549,700 tons, up 266.5 percent from 1980.

An area totaling 867,000 mu was afforested during the Sixth 5-Year Plan. This equaled the total area afforested for the 30 years prior to 1980. In 1985, 520,000 mu was planted to trees, 8.5 times as much as the area afforested in 1980. (Fu Biduo [0265 1801 6995])

SICHUAN. The gross output value of Sichuan's industry and agriculture for 1985 was 128.55 million yuan [sic], up 106 percent from 1980. This included an industrial output value for 1985 of 89.97 million yuan, up 198.01 percent from 1980. Pre-tax profits of 13.7 million yuan were up 87.16 percent from 1980 and a per capita income of 938 percent was up 59.52 percent from 1980.

In 1985, gross output of tea was 1,003 tons, up 31.45 percent from 1980; gross output of rhizome of Chinese goldthread (Coptis chinensis) was 2,216 tons, up 2,741.03 percent from 1980; gross output of alcoholic beverages was 2,603 tons, up 178.10 percent from 1980; gross output of canned goods was 3,872 tons, up 273.03 percent from 1980; gross output of beverages was 2,011 tons, up 100 percent from 1980; gross output of dairy products was 1,070 tons, up 15.43 percent from 1980; and gross output of liquid nitrogen tanks was 2,551 tons, up 41.8 percent from 1980. (Statistics and Finance Bureaus, Farm Administration Department, Sichuan Provincial Agriculture and Animal Husbandry Office)

ZHEJIANG. The Sixth 5-Year Plan period was one in which the economic foundation for state farm and land reclamation in Zhejiang Province went from weakness to development and strength. Growth in the gross output value of industry and agriculture kept pace in both net profits and in the amount of taxes paid to the state, and output of principle products also rose tremendously.

Gross output value of industry and agriculture: In 1985, the gross output value of industry and agriculture in Zhejiang was 288,706,000 yuan, up 147.5 percent from 1980. The Sixth 5-Year Plan period rate of increase was 19.9 percent. Gross profits: In 1985, gross profits were 28,957,000 yuan, up 204.4

percent from 1980. The rate of increase in profits during the Sixth 5-Year Plan Period was 24.9 percent. Tax payments in 1985 totaled 17,027,100 yuan, up 183.5 percent from 1980 for a 23.2 percent increase rate during the Sixth 5-Year Plan. Per capita income: In 1985, per capita income was 1,217.85 yuan,up 76.2 percent from 1980.

Gross output of grain and pulses in 1985 was 37,919.6 tons in a 2.3 percent rise over 1980. Gross output of tea was 4,147.2 tons in 1985 in a 34.9 percent increase over 1980. Gross output of citrus fruits was 7,666.2 tons in 1985, up 259 percent from 1980. Gross output of milk in 1985 was 19,015.3 tons for a 68.7 percent increase over 1980. Gross output of meat was 3,581.9 tons in 1985, up 25.5 percent from 1980. Gross output of aquatic products in 1985 was 597.6 tons in a 223.2 percent rise from 1980. Gross earnings from the export of commodities was 21,471,000 yuan in 1985, 96.8 percent more than in 1980. (Mao Baoquan [5403 1405 0356])

HENAN. The gross output value of industry and agriculture during the Sixth 5-Year Plan was 511,614,300 yuan, a 51.7 percent increase over the Fifth 5-Year Plan period. Gross output value of industry and agriculture in 1985 was 123,400,000 yuan, up 40.5 percent from 1980. Profit was 7,683,800 yuan, up 175 percent from 1980. Tax payments were 4,696,000 yuan, up 59 percent from 1980; and per capita income was 432.13 yuan, up 24.6 percent from 1980.

Gross output of grain in 1985 was 73,988 tons in a 9.2 percent increase over 1980. Gross output of cotton was 1,145 tons, up 90.8 percent from 1980. Gross output of oil-bearing crops was 2,713 tons, up 210 percent from 1980. Gross output of meat was 2,362 tons, up 107.8 percent from 1980. Gross output of milk was 2,136 tons in a 109.1 percent rise from 1980. Gross output of alcoholic beverages was 101,970 tons, an increase of 130.1 percent over 1980. Commodity grain turned over to the state during the Sixth 5-Year Plan totaled 166,319.5 tons in a 31 percent increase over the Fifth 5-Year Plan period. (Peng Quanlin [1756 3123 2651])

HUBEI. The Hubei Provincial state farm and land reclamation economy had sustained, steady and coordinated development during the Sixth 5-Year Plan, all economic indicators being higher than the average for the province as a whole. The gross output value of industry and agriculture increased 116.3 percent, averaging 16.7 percent a year. This included a 162.2 percent growth in the gross output value of industry, or an annual 21.3 percent. The gross output value of agriculture increased 95.1 percent, or 14.3 percent annually. During the last 2 years of the Sixth 5-Year plan, in particular, the growth rate accounted for 72 percent of the total for the entire Sixth 5-Year Plan period. In 1985, the gross output value of industry and agriculture was 1.22 billion yuan, or more than double 1980's 540 million yuan. Per capita income was only 209 yuan in 1980; in 1985 it was 470 yuan for a 124.9 percent rise.

1. Agriculture gained strength from readjustments. During 1985, the grain and cotton growing area was reduced by 9 percent and 10 percent respectively from the previous year, yet gross output of grain reached 610,000 tons, basically the same amount as in 1984. Comparison with 1984 of the output of cash crops shows a 60 percent increase in oil-bearing crops, an increase of more than twice as much for hemp crops, and a 53.9 percent increase in sugar crops.

2. Economic diversification developed very rapidly. Comparison of 1985 with 1984 shows the production of 27,640 tons of pork in a 41.7 percent increase; 14,700 tons of fish for a 59.7 percent increase; 16,000 tons of fresh eggs for a 47.6 percent increase; 11,400 tons of milk for a 14 percent increase; and 14,390 tons of fruit for an 82.3 percent increase. The output value from economic diversification plus forestry, animal husbandry, sideline occupations and fisheries totaled 324 million yuan or 57.5 percent of the gross output value of agriculture.

3. Industry developed at a faster rate than agriculture. Comparison of 1985 with 1984 shows a rise in the percentage of gross output value of industry and agriculture occupied by industry from 46.8 percent to 53.8 percent. Food industries that use agricultural and sideline products as raw materials developed particularly fast and had an output value of 180 million yuan, or 50 percent more than in 1984, accounting for 27.3 percent of the output value of industry.

4. Marked rise in economic results. Despite a decline in output and a drop in the price of cotton during 1985, the output value of agriculture not only did not decline but rather increased by 54 million yuan over 1984. Employee income also increased over 1984. (Hua Jigao [5478 4949 7559])

JIANGXI. Gross output value of industry and agriculture for Jiangxi Province during the Sixth 5-Year Plan was 2.91505 billion yuan, a 62.66 percent increase over the Fifth 5-Year Plan. This included 782.28 million yuan in 1985 for a 68.5 percent increase over 1980. Profit for the Sixth 5-Year Plan period was 120.93 million yuan, up 481.79 percent from the Fifth 5-Year Plan period. This included profits of 47.08 million yuan in 1985, a 478.2 percent increase over 1980. Gross output of grain during the Sixth 5-Year Plan period was 1,143,780 tons, a 24.83 percent increase over the Fifth 5-Year Plan period. This included 246,920 tons for 1985, a 16.59 percent increase over 1980. Gross output of cotton during the Sixth 5-Year Plan was 5,663 tons, up 114.41 percent from the Fifth 5-Year Plan. This included 1,698 tons for 1985, up 89.69 percent from 1980. Gross output of oil-bearing crops for the Sixth 5-Year Plan period was 30,405 tons, a 76.50 percent increase over the Fifth 5-Year Plan period. This included 8,799 tons for 1985 for a 150.39 percent increase over 1980. (You Hesheng [3266 7729 5116])

NEI MONGGOL. All economic targets were met rather well in the Nei Monggol farm and pastureland system, creating the finest period in history.

Gross output of industry and agriculture in 1985 reached 380 million yuan in a 56 percent increase over 1980 for an average annual 9.4 percent increase. During the Sixth 5-Year Plan, the Bayannur League and the Jirem League farm and pastureland system doubled the output value of their industry and agriculture.

Agricultural Production: In 1985, gross output of grain and pulses was 307,500 tons, up 18.1 percent from 1980. In an average annual 3.4 percent increase. In 1985, 130,000 tons of grain and pulses were turn over to the state, 53.5 percent more than in 1980. The commodity rate rose from 32.5 percent in 1980 to 43 percent in 1985. Gross output of oil-bearing crops was 40,310 tons in 1985, almost four times as much as in 1980.

Animal Husbandry Production: In 1985, 1.07 million head of large and small livestock were in inventory, up 14 percent from 1980. Output of major livestock products such as meat, milk, hides and wool increased substantially. In 1985, 126,000 hogs were in inventory, 20,000 more than in 1984. The poultry raising industry saw great development, the number of poultry being raised in 1985 rising to 1.6 million, more than double the 1984 number and more than 10 times as much as in 1980.

Forestry Production: During the Sixth 5-Year Plan period, a 323,000 mu area was afforested.

Industrial Production: In 1985, industrial output value was 85 million yuan, up 74.5 percent from 1980 in an average annual 11.8 percent increase. Outputs of major industrial products such as coal, bricks and tiles, dairy products, alcoholic beverages, and leather goods increased tremendously.

Operating Results. During the Sixth 5-Year Plan, operating results rose tremendously year by year. In 1980, losses still amounted to 43.56 million yuan, but in 1983 losses turned into gains with a profit of 8.47 million yuan. Profits for 1985 are forecast at 10 million yuan.

Employee Income: Forecasts call for average earnings of approximately 1,000 yuan for employees, which amounts to 400 yuan per capita, up 13.6 percent from 1984, and up 36.5 percent from 1980 in an average annual 6.4 percent increase. (Nei Monggol Autonomous Region Farm Management Bureau).

LIAONING. During the Sixth 5-Year Plan, Liaoning state farm and land reclamation enterprises advanced steadily in the midst of reforms, production in farming, animal husbandry, fisheries, industry and business on state-owned farms presenting a thriving scene. Despite the severe hailstorm and flood disasters of 1985, fine achievements were scored in all fields of production.

During the Sixth 5-Year Plan period, the gross output value of industry and agriculture was 2,877,410,000 yuan, a 56.5 percent increase over the Fifth 5-Year Plan period for an average annual 10.8 percent rate of increase. In 1985, the gross output value of industry and agriculture reached 700 million yuan, up 67.3 percent from 1980. Net profit for the Sixth 5-Year Plan period was 155.98 million yuan, 215.7 percent more than for the Fifth 5-Year Plan period. In 1985, per capita income was 558 yuan, up 186 percent from 1980.

During the Sixth 5-Year Plan, gross output of grain and pulses was 2,813,140 tons, up 26.3 percent from the Fifth 5-Year Plan period. Cow's milk output was 182,105 tons, up 45 percent from the Fifth 5-Year Plan period. Meat output was 79,370 tons, up 55.5 percent from the Fifth 5-Year Plan period. This included 17,000 tons in 1985, up 142.8 percent from 1980. Egg output was 27,945 tons for a 372 percent increase over the Fifth 5-Year Plan period. Output of aquatic products was 41,525 tons in a 241.7 percent rise over the Fifth 5-Year Plan period. (Liu Fenglin [2692 6646 2651])

JIANGSU. During the Sixth 5-Year Plan, the gross output value of industry and agriculture increased at an average 13.7 percent per year and profits grew at an average 10.58 percent per year. The gross output value of industry and agriculture in 1985 was 581.43 million yuan, up 90.17 percent from 1980. The gross output value of industry was 389.75 million yuan, a 106.14 percent rise over 1980. This included an output value of 199.97 million yuan from farm operated industries for a 146.45 percent increase over 1980. Profits of 67.24 million yuan were 65.37 percent higher than in 1980.

Gross output of grain and pulses in 1985 was 212,330 tons, up 90.17 percent from 1980. Gross output of cotton was 10,672 tons, a 1.33 percent increase over 1980. Gross output of oil-bearing crops was 9,335 tons, 19 times as much as the 1980 figure. (Zhu Linfu [2612 2651 3940])

SHANXI. During the Sixth 5-Year Plan, the gross output value of Shanxi's industry and agriculture grew an an average 18.7 percent each year. In 1985, the gross output value of industry and agriculture was 48.66 million yuan, up 135.8 percent from 1980. Profits amounted to 6.82 million yuan in a 414.7 percent increase over 1980. Per capita income was 1,135 yuan, up 83.9 percent from 1980.

Milk output in 1985 was 18,789.1 tons for a 59.7 percent increase over 1980. Output of dairy products was 3,044.5 tons for a 191.7 percent increase over 1980. Raw coal output was 135,8900 tons, up 579 percent from 1980. Gross output of grain was 6,753,000 jin. (Zhang Shufang [1728 2885 2455])

9432
CSO:4007/445

COOPERATION BETWEEN HUNAN, GUANGXI ON PORK, EGG PRODUCTION

Beijing ZHONGGUO SHANGYE BAO in Chinese 3 Jun 86 p 1

[Article: "Hunan and Guangxi Establish Long-Term, Fixed Joint Management Relationships for Pork and Eggs--Hunan Will Supply Guangxi with 300,000 Mature Pigs, 5,000 Tons of Frozen Pork and 1,000 Tons of Fresh Eggs Annually from 1986 to 1990."]

[Text] Since developing joint management of pigs, Hunan and Guangxi provinces have reached agreement on 32 food product management enterprises that will establish long-term fixed relationships on jointly managing pork and egge production.

First, joint management strengthens planning, reduces blind action and provides benefits to participation in market regulation and development of negotiated purchases and sales. The two sides agreed that Hunan will supply Guangxi 300,000 mature pigs, 5,000 tons of frozen pork, and 1,000 tons of fresh eggs.

Second, the number of jointly managed commodities and product varieties has increased. Because joint management is carried out among food product enterprises in producing and selling areas, exchange of information on production and sales may invigorate circulation. According to statistics from 17 counties in Hunan that are participating in joint management, 245,000 mature pigs were sent to Guangxi in 1985 and the amount under joint management in 1986 may be over 20 percent higher than in 1985. In addition, it was decided to increase the number of product varieties involved in joint management. Hunan organized its jointly managed meat plants to process and supply Guangxi with pork byproducts, such as stomach, heart, liver, tongue, intestines, unskinned streaky pork, bones, and so on.

Third, joint management has produced economic results. The fact that grassroots enterprises are establishing joint management as needed with interlinked coordination throughout has permitted a reduction in links, speeded up product turnover, and lowered expenses and wastage. The production, purchasing, and selling situations on each side of joint management serve as the basis for employing the method of operating at slight profits and negotiating prices according to the market. The delivered price of pigs Hunan shipped and sold to Guangxi during May and

June of 1986 was about 4 percent lower than during March and April, and Hunan maintained a profit rate of about 2 percent. The result has been that Guangxi is enthusiastically taking delivery, so Hunan is selling more at a slight profit, which has played a positive role in promoting production and stabilizing markets.

12539/9835
CSO: 4007/460

RURAL CREDIT COOPERATIVES SPUR FARM OUTPUT

Hefei ANHUI RIBAO in Chinese 17 Jul 86 p 1

[Article: "Vigorous Savings and Loan Services in Anhui Province's Credit Cooperatives--Organize Idle Capital To Support Agricultural Production"]

[Text] Rural credit cooperatives are playing an ever-larger role in circulating and regulating capital activities in the rural areas of Anhui Province. During the first half of 1986, Anhui's credit cooperatives issued more than 1.3 billion yuan in loans, with 70 percent of the total amount loaned going to agricultural production focused on grain. This is more than ninefold the amount of agricultural credit issued by agricultural banks throughout Anhui over the same period last year. There was a gratifying situation in credit cooperative savings during the first half of 1986, with total savings deposits of 2,268,000,000 yuan at the end of June, up 514 million yuan over the same period in 1985. This is the first substantial increase in credit cooperative saving deposits in history in Anhui Province.

The flourishing development of savings and loans activities in credit cooperatives indicates that systemic reforms in credit cooperatives have given them greater vitality and that the role of civilian loans has been utilized to a greater degree. The main characteristics of credit activities in Anhui Province's credit cooperatives during the first half of 1986 were: 1) There has been strict adherence to the spirit of CPC Central Committee Resolution No 1 (1986) and credit work in its entirety has focused on support of agricultural production, especially grain production; 2) there has been continued conformance with state demands for stronger macroeconomic controls by increasing vitality through tight credit and major efforts to organize capital. Credit cooperatives in all areas have reinforced propaganda concerning deposits, and so on. Savings deposits have risen substantially and they basically guarantee the capital needed to support agricultural production.

12539/12859
CSO: 4007/487

PROBLEMS PERSIST IN PIG PRODUCTION

Hefei ANHUI RIBAO in Chinese 23 Jul 86 p 1

[Article: "Animal Husbandry in Anhui Province Develops During the First Half of 1986, Many Problems in Pig Raising and Production Deserve Attention"]

[Text] Animal husbandry production in Anhui Province grew during the first half of 1986. Statistics from the end of June put Anhui's livestock inventories at 4,658,000 head, up 6.6 percent over the same period in 1985 and the highest level in history. Sheep inventories were 2,357,000, up 2.7 percent. The number of pigs slaughtered was 4,902,000, up 14.5 percent. This included 284,000 lean pigs, up 6.5-fold. Total output of pork, beef and mutton in Anhui Province during the first half of 1986 was 387,000 tons, up 16.2 percent over the same period in 1985.

The animal husbandry situation in Anhui Province was rather good during the first half of 1986 but many problems persist in pork production that deserve our attention: 1) There has been a reduction in pig inventories and the number of fertile sows. Anhui had pig inventories of 13,739,000 at the end of June 1986, down 196,000, or 1.4 percent, from the same period in 1985. There were 840,000 fertile sows, down 60,000, or 6.6 percent, from the same period in 1985. 2) Rising feed prices have increased the cost of pig raising. Prices for corn, sweet potato flakes and other feeds in Anhui were up more than 35 percent during the first half of 1986. Peasant earnings from the sale of one 100 kg pig were reduced by about 30 yuan. 3) Disease prevention work for pigs has not been carried out well in some regions and the number of deaths has risen, with the number of pig deaths being up 10.1 percent during the first half of 1986 compared with the same period in 1985.

12539/12859
CSO: 4007/487

RESULTS FROM COMMODITY GRAIN BASES ANALYZED

Hefei ANHUI RIBAO in Chinese 7 May 86 p 1

[Article: "Construction of Commodity Grain Bases in Anhui is Beginning To Show Results: Unit Grain Yield, Net Percentage of Marketable Products, and Per Capita Income in 8 Commodity Grain Base Counties Exceed Average Anhui Levels"]

[Text] Construction of pilot commodity grain base counties, the largest scale agricultural capital construction project undertaken by Anhui during the 6th 5-Year Plan, is essentially complete in all facets after 3 years of efforts. The relevant state ministries and commissions have made their inspections and accepted the work as up to standard.

In 1983 the state settled on 8 pilot counties for commodity grain production bases: Lu'an, Shou, Huoqiu, Feixi, Changfeng, Lujiang, Fengyang, and Tianchang. The pattern adopted was that of "joint investment and close linkage between money and grain." As of the end of 1985 a total 102.09 million yuan had been invested and more than 5,300 tons of steel, 50,000-plus tons of cement, and over 6,800 cubic meters of lumber had been selected. The 8 commodity grain base counties made sound use of this investment and achieved good results by constructing farm technology extension systems, systems to promote breeding of improved varieties, small-scale field-irrigation works, and small-scale processing and service facilities for agricultural products. In 3 years these 8 counties have built 8 farm technology extension centers and 116 regional and township agricultural technology stations, trained 800,000 rural workers of various kinds, and disseminated 285 items of new agricultural technology. They have also established 21 breeding farms, set aside 210,000 mu of land for breed-improvement bases, bred 130 million jin of improved varieties, and extended the land area growing improved varieties to over 23 million mu. In addition, they have set up 201 small feed-processing plants, more than 3,400 small food-products factories (or mills), 13 small egg-processing plants, and they have converted 3.67 billion jin of grain. According to statistics, in 1985 the gross grain output in these 8 counties was 8.23 billion jin, or 8.4 percent higher than it was in 1982, before the bases were established. The unit grain yield in 1985 was 615 jin, up 12.8 percent over 1982. This is some 125 jin higher than the average in Anhui. The commodity grain base counties transferred 2.95 billion jin of grain to the state in 1985, an increase of 26.6 percent over 1982. The net ratio of marketable grain products was 31.3 percent, or 8 percentage points higher than the average province-wide. Grain expansion has spurred growth in the livestock industry and has simultaneously brought about a transformation in the composition of agricultural production. The more rational composition has greatly increased peasant income: in 1985 the average per capita peasant net income was 385 yuan, or 4.3 percent greater than the per capita income for the province as a whole.

The construction of commodity grain bases has been a success. It has provided fresh experiences on which we may draw for agricultural capital construction during the 7th 5-Year Plan. In order to continue readjusting rural industrial composition and stimulate comprehensive and coordinated development of agriculture, forestry, animal husbandry, sidelines, and fishery, during the 7th 5-Year Plan the state and the province must increase their agricultural investments. They must persist in establishing a group of commodity grain bases, farm and sideline product export production bases, and commodity high-quality farm product production bases. They must also branch out from the single original type of commodity grain base to commodity production bases that encompass all fields of agriculture, forestry, animal husbandry, sidelines, and fishery.

12510
CSO: 4007/432

MAJOR EFFORT NEEDED TO DEVELOP TOBACCO PRODUCTION

Hefei ANHUI RIBAO in Chinese 19 Jul 86 p 2

[Article: "The Way Out Is A Major Effort To Develop High-Quality Flue-Cured Tobacco"]

[Text] How can we open up a new situation in flue-cured tobacco production in Anhui Province? Our feeling after making an investigation focused on nine tobacco-growing townships in Yicheng County and visits to relevant prefectural and county departments and S&T personnel is that we must make the necessary readjustments and reforms in areas such as guiding principles, production, sales, and other aspects of flue-cured tobacco development. We must strive to develop high-quality flue-cured tobacco if we wish to invigorate Anhui Province's flue-cured tobacco industry.

The present situation in flue-cured tobacco production in Yicheng County indicates that many problems exist: flue-cured tobacco products are too varied, mixed up, of poor quality and have serious problems with impurities. There were 12 varieties of flue-cured tobacco planted during 1985 in Yicheng County alone, including several varieties abandoned by foreign countries and no longer planted by key flue-cured tobacco provinces and autonomous regions as well as scientific research units. Problems can also be found in materials supplies. An example is the significant increase in the price of coal used to cure the tobacco, and the same situation can be found in supplies of compound fertilizers, cake fertilizers, and other products.

Tobacco growers have insisted strongly that certain technical measures are incorrect and the curing barns of some tobacco growers are substandard, which has lowered the quality of flue-cured tobacco. Another problem can be found in purchasing prices for flue-cured tobacco, with purchasing departments opening their scales late, closing their doors early, and having a poor service attitude. It was August before all purchasing points were making purchases in Yicheng County during 1985, and the large amount of flue-cured tobacco and lack of storage among some tobacco growers caused spoilage and created unneeded losses. In the area of leadership and technical guidance, there is inadequate vitality, especially among some cadres and technical personnel engaged in flue-cured tobacco production. Their work is not firm enough and the role of technical personnel in the tobacco system is not being utilized fully. There is inadequate coordination among S&T, agrotechnical, and other departments in southern Anhui, no integrative or cooperative links have been developed with technical forces in other areas and regions, and so on.

It should be noted, however, that there are many beneficial factors involved in rapid development of flue-cured tobacco production in Anhui Province, especially high-quality flue-cured tobacco. A comparison of natural conditions indicates that flue-cured tobacco producing regions in Anhui have superior climate, soils, water, fertilizer, and illumination conditions compared with tobacco-growing regions in Yunnan and Guizhou. Anhui has an area of about 1.75 million mu suitable for planting tobacco. If we were to follow the state's plan of planting 500,000 mu of tobacco once every 3 years, we would still have enough tobacco left over to create "tobacco exporting" base area. The consistent opinion of provincial, prefectural, county, and state science commissions after several surveys has been that southern Anhui is the most suitable area for growing tobacco. The leaf produced is of inherently good quality and is fully capable of reaching or even surpassing high-quality tobacco produced in Yunnan and Guizhou. Anhui Province, however, pays out nearly 100 million yuan in local financial expenditures to purchase tobacco from Yunnan and Guizho each year and even scarce materials have been used as "exchange" at times. To deal with this situation, Anhui Province should work to develop and construct a high-quality tobacco raw materials base area in southern Anhui.

How can the southern Anhui high-quality tobacco raw materials base area be developed and constructed as quickly as possible? We feel that: 1) We must do wide-ranging propaganda concerning the strategic policy and significance of "moving northern tobacco southward" formulated by the Anhui Province CPC Committee and the Anhui Provincial Government so that every family in the new southern Anhui tobacco region understands the principle of "planting more flue-cured tobacco, achieving prosperity for their families, benefiting the nation and the people." 2) In southern Anhui (Wuhu or Yicheng prefectures), we should work quickly to establish flue-cured tobacco technical service centers and base areas (farms, sites, stations) to breed improved varieties in a major effort to develop high-quality tobacco. 3) Based on the Seventh 5-Year Plan, we should produce more low-tar nontoxic medicinal tobacco or medium- and high-grade shelf cigarettes.

Anhui's actual situation at the present time shows us that we should adopt decisive measures to block large tobacco factories, strictly control purchases of outside tobacco leaf, and force the tobacco factories to seek high-quality tobacco resources and take the initiative to go to southern Anhui and support high-quality tobacco production. Second, tobacco-growing regions produce too much low-quality tobacco every year, and low-quality tobacco cannot be sold. Anhui still has large reserves that are tying up capital and wasting finances and materials. For this reason, a "big reform" should be made in flue-cured tobacco production--tobacco growers should be guided to avoid stripping and curing low-quality top and bottom leaves and to strip and cure only the long, big, and thick highly mature, high-quality leaf in the middle of the plants. This would conserve on manpower, curing, and finances, and it also would conserve on coal and other materials. Calculations indicate that if we do not strip and cure low-quality tobacco, we could save 450 jin of coal per mu of tobacco (using 3 jin of coal per jin of dried tobacco). This would reduce coal expenditures by about 20 yuan per mu (calculated at a coal price of 80 yuan per ton). If the state did not accept low-quality tobacco, it could save about 60 yuan per mu (at 0.40 yuan per jin), which would have beneficial effects on state fund turnaround. If we extrapolate in this fashion, planting 100,000 mu of flue-cured tobacco in southern Anhui and not curing low-quality tobacco leaf could save 22,500 tons of coal. Tobacco growers would be able to reduce their costs by about 2 million yuan and the state could save about 6 million yuan in capital.

It is apparent that if we do not strip, cure, or purchase low-quality tobacco and only strip, cure, and purchase medium- and high-grade (shelf) tobacco leaves, there would be benefits for both the state and the people, so this is of major significance. The needed reforms should be carried out in flue-cured tobacco production and processing in Anhui at present. We cannot rely on old varieties, large numbers of varieties, old techniques, old production methods, old products, and old selling methods. We should dare to develop and innovate and establish information and research service systems to popularize and improve technical standards among tobacco growers and among cadres and the masses in the tobacco system as quickly as possible. In addition, we should work on horizontal technical coordination with contractual responsibility for areas and clear rewards and punishments to implement economic systems of contractual responsibility that tie together economics, technology, and value of output and achieve comprehensive contracting. All relevant departments should provide high-quality services and work quickly to train and improve the technical levels of personnel grading tobacco leaf. We must work in every possible way to guarantee supplies of farm chemicals, coal, fertilizer, and other materials and provide timely services to motivate the initiative of tobacco growers to develop high-quality tobacco and raise flue-cured tobacco production in Anhui Province up to new levels.

12539/12859
CSO: 4007/487

PROBLEMS IN TIMBER SUPPLY, DEMAND

Fuzhou FUJIAN RIBAO in Chinese 5 Jul 86 p 1

[Article: "The Contradiction Between Timber Supply and Demand in Fujian Province Is Acute--Only 30-Plus Percent of Fujian Province's Timber Tasks Were Completed During the First Half of 1986, Several Large Paper Mills Are Having Problems with Raw Materials"]

[Text] There is an extremely acute contradiction between timber supply and demand in Fujian Province in 1986. It is our understanding that the inability of timber supplies to keep pace has caused stoppages or semistoppages at certain key construction projects and enterprises that use timber as raw materials. Fujian Province's three major paper mills, the Nanping Paper Mill, the Qingzhou Paper Mill and the Fuzhou Paper Mill as well as the Fuzhou Lumber Mill and other large timber consumers are in a semishutdown state because of timber shortages. Supplies of mine-support timber cannot meet demand and some large coal mines in the north have asked for emergency help. Because timber production plans were not completed, there have been obvious declines in taxes and profits paid to higher authorities and the incomes of forest collectives and foresters also have been greatly affected.

The 1986 timber production index issued by Fujian Province was 4.6 million cubic meters (including timber used locally and by the masses). According to statistics from forestry departments in Fujian, only 1,567,000 cubic meters of Fujian Province's timber production tasks had been completed up to the end of June 1986, which is equal to 32.6 percent of total yearly tasks. Moreover, only 11 percent of the task of turning over 400,000 cubic meters of timber assigned by central authorities had been completed by the middle part of June.

The main reasons for the inability to complete timber production tasks during 1986 are:

1. Excess taxes and fees in timber-selling links. Areas like Shanhang, Changting, Shaxian, Jian'ou, Zhenghe and others have indicated that besides the "two funds, two taxes and one fee" (the afforestation fund, development fund, commodity tax, special products tax, and measuring fee) collected from production units and foresters during timber purchases and sales in accordance with stipulations made by central and provincial authorities, some counties and townships in forest areas are using various pretexts to collect many

other fees, such as timber management fees, procedural fees, passage fees, forest administration management fees, family planning fees, education fund fees, poverty relief fees, office fees, urban and rural construction fees, business fees, afforestation fees, renewal fees, and so on, with the number of fees being collected often reaching 30 or 40. When a forester sells a cubic meter of timber, the various taxes and fees levied by the state, county, township and village levels can exceed 60 percent of the selling price for the timber. For the remaining 40 percent, besides the costs of cutting and shipping and mountain payments (half of this is taken by some townships and villages), the forester is left with a net profit equal to only 10 percent of the selling price.

2. After the deregulation of timber, the selling price for timber rose and financial administrations at all levels increased their incomes while investments in forestry have declined. Now, forest regions are only able to continue to repair and protect roads there and are unable to extend roads and update timber-production equipment.

3. After the deregulation of timber, prices still have not been put in order and producers and sellers are calling for equal treatment in prices. According to decisions made by Fujian Province to protect the interests of foresters, there is a lower limit but no upper limit on the price of timber. During 1986, however, some regions have employed administrative measures to force down purchase prices for timber turned over to higher authorities and timber they use locally themselves. Timber production units and foresters feel they can make no profits, so they are unwilling to produce more timber.

4. Leadership over timber production has become lax in some counties and cities in forest regions during 1986. Restricted cutting indices issued by the province often are not implemented down to the township, village, and production unit levels within a county. Preparation work for timber production is not keeping pace and insufficient numbers of lumberjacks are coming to work.

The situation outlined above shows that forestry departments in Fujian Province should adopt effective measures to focus on timber production during the last half of 1986. Unified arrangements should be made for timber supplies in all areas and there should be no regional barriers. In addition, party and government departments at all levels should work as quickly as possible to stop "skimming" at every level during the purchasing and sale of timber and transfer the benefits to foresters, and they should make appropriate increases in forestry investments to encourage the initiative of the masses to develop forestry.

12539/9835
CSO: 4007/480

BRIEFS

SUMMER GRAIN HARVEST--Gansu reaped a bumper summer grain harvest, with total output estimated at 3.76 billion kg, an increase of 150 million kg over last year. The harvest was the third best in the province's history. [Summary] [Lanzhou Gansu Provincial Service in Mandarin 2200 GMT 6 Sep 86 HK] /9599

WATER CONSERVANCY MANAGEMENT TASKS--The goals of endeavor in Gansu's water conservancy management during the 7th 5-Year Plan are as follows: to basically complete the strengthening of the (Biantian) reservoir and finish its main and key projects; and to increase the effective irrigated area by over 1.5 million mu by tapping potentials, completing projects, and using water scientifically. The province's effective irrigated area will thus increase from 11.5 million mu to 13 million mu. These goals of endeavor were ascertained from the provincial conference on water conservancy management, which concluded in Wuwei on 8 September. To achieve these goals, the provincial authorities have called on the water conservancy management departments to carry out reform of the management structure, and to do a good job tidying up, completing, and renovating the existing projects and improving their efficiency. Vice Governor Lu Ming attended and spoke at the meeting. [Excerpts] [Lanzhou Gansu Provincial Service in Mandarin 2200 GMT 8 Sep 86] /9599

CSO: 4007/2

SUGARCANE OUTPUT IN PROVINCE SETS NEW RECORD

Guangzhou NANFANG RIBAO in Chinese 29 May 86 p 1

[Article by Yuan Diao [6678 6860], Rui Zhen [3843 6297] and Yu Shan [5148 1472]: "Guangdong Province Sugarcane Production Sets New Record; 1985-1986 Sugarcane Pressing Season Production Nearly 2 Million Tons, 20 Percent Higher Than Last Pressing Season"]

[Text] The 1985-1986 Guangdong Province sugarcane pressing season is essentially over. As of 20 May pressed sugarcane production for the entire province had reached 17.35 million tons with sugar production at 1.92 million tons. These figures, both new records, are 22 percent and 20 percent higher than those of the last sugarcane pressing season.

Last year, as a result of the thorough implementation of the provincial government's policy of "thoroughly transforming the price system," the peasants became even more enthusiastic about growing sugarcane. The area under sugarcane cultivation in Guangdong Province grew rapidly. Statistics shows that the area under cane cultivation during this cane pressing season was 5.8 million mu, 1.3 million mu more than last season. Typhoons, insect pests, drought, and other natural misfortunes affected the growth of the sugarcane and reduced the sugar content of the cane. In order to cut losses to the bare minimum and to raise the sugar content of the cane, the sugar refining industry increased its technical assistance efforts and technical contracts. More than 210 people were sent from 9 large factories to help 17 small and medium-sized factories. At these factories they promoted modern management methods, such as management by goals, to helping raise the technical and management level of the sugar refining industry of the entire province. During this cane pressing season new techniques and new designs were popularized and adopted. Forty-nine sugar refineries throughout the province have adopted 106 small machines used in boiling sugar and in the management of production. Some enterprises are promoting techniques for drying cane residues and preserving of cane residue which have clearly proven themselves in production.

12369/12948
CSO: 4007/438

PROVINCE'S POLICY TO SUPPORT POOR HOUSEHOLDS

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 4, 5 Apr 86 p 35

[Article: "Guangxi's 10 Preferential Policies To Support the Poor"]

[Text] The Guangzi Zhuang Autonomous Region CPC Committee and Government have formulated 10 preferential policies for poor and mountainous regions:

1. Especially poor households that have been checked and approved by township (town) governments and related departments should have their grain rations supplied at parity prices, with the price differential to be subsidized by local financial authorities. Poor households that also have grain shortages should receive help from civil administration departments.

2. The amount of 0.001 yuan per kWh should be deducted for power generated by reservoir power stations to serve as a protection fund for the reservoir region, and a certain proportion of capital should be taken out of the protection fund to support the production and lives of families resettled from the reservoir area.

3. Strengthen management over timber and protect the interests of foresters. With the exception of taxes and fees whose collection is stipulated by decisions made by central or autonomous region authorities, no other fees should be collected by counties, townships, and other departments under whatever pretext.

4. The township and town enterprises in the 211 townships (towns) originally selected for key assistance should continue to be exempted from income taxes during 1986. If there are problems, the exemption can be extended to 1988 with approval by county (city) governments. Developmental enterprises established by units and individuals from other areas or the townships and towns mentioned above are to be exempt from income taxes for 5 years from the date they go into operation.

5. Factory and mining enterprises and sites under direct jurisdiction of the Guangxi Zhuang Autonomous Region that are located in old revolutionary base areas, minority nationality areas, frontier regions, mountainous areas, and poor regions gradually should be transferred downward for management by local counties (cities).

6. Beginning in 1986, administrative expenses allocated by the Guangxi Zhuang Autonomous Region for technical transformation should provide appropriate consideration for enterprises in the 48 poor counties (cities).

7. The low interest frontier region assistance loans issued to Guangxi by the state each year should be used mainly to support the 48 counties (cities) and 211 townships (towns) in mountainous regions and the focus should be placed on agriculture, forestry, animal husbandry, sideline production, and processing industries.

8. The 36 civilian trade counties already demarcated should continue to implement the "three considerations for civilian trade" policy. One aspect is the capital owned by civilian trade enterprises. Interest-free and low-interest consideration in interest rates should be calculated according to the proportion of 80 percent of the commodity capital for retail enterprises and 50 percent of the commodity capital for wholesale enterprises, with each of the wholesale and retail enterprises borrowing their capital from the bank on that basis and regional financial administrations paying the interest. The second thing is that no changes will be made in the original proportion of retained profits in civilian trade enterprises. All are exempted from collection of energy and communications funds, construction taxes, and other increased taxes. Small civilian trade enterprises that practice eight-level accumulation should have their income taxes reduced by one-half. The third aspect concerns special local products, salt and other household needs of civilian trade counties, with district financial administrations continuing to provide subsidies and reimbursements for shipping costs.

9. Assist poor areas to set up base areas for earning export foreign exchange from farm, sideline, and special local products. Foreign trade departments should provide support mainly in the areas of information, capital, technologies, personnel, and so on to promote economic development in poor regions.

10. Family planning and public health departments should assign forces to assist poor regions in carrying out family planning work well and to select the best for providing medicines and techniques.

12539/9835
CSO: 4007/480

LIVESTOCK, PROCESSING INDUSTRY GROWTH DISCUSSED

Hongkong CHING-CHI TAO-PAO [ECONOMIC REPORTER] in Chinese No 17, 5 May 86 p 31

[Article by Chen Haiyun [7115 3189 0061], Director of the Guangxi Zhuang Autonomous Region Livestock Bureau, under the rubric "Report on a Special Chinese Topic": "Bright Prospects for Guangxi's Animal Husbandry and Livestock-Products Processing Industries"]

[Text] Guangxi Zhuang Autonomous Region is located on the southern border of China. It is rich in natural resources and neighbors on Hong Kong and Macao, which make it extremely conducive to developing animal husbandry and livestock-products processing industries.

Of Guangxi's total area of over 230,000 square kilometers, there are 6 million hectares of hitherto undeveloped grassy slopes and mountainsides suitable for livestock. The region is subtropical and experiences an annual average temperature of 17 to 22 degrees Celsius. Temperatures below 0 or above 35 degrees Celsius occur only briefly each year in a few areas. Annual precipitation measures 1,200 to 1,600 mm and a total 1,400 to 1,800 hours of sunlight are logged each year. Our climate is warm, rainfall is abundant, illumination is adequate, and the land is richly endowed by nature. Fodder and forage grass resources are plentiful and there are many farm and sideline products that can be used for livestock and poultry: in addition to corn, paddy, and legumes, we also have cassava, sugarcane, forest byproducts, aquatic products, and so forth that are advantageous for developing swine, poultry, and herbivorous animals. We have numerous well-known, specialty, and superior varieties of livestock and poultry in Guangxi: southern Guangxi's Sanhuang Chicken, which is tender, succulent, and historically has been favored by consumers in Hong Kong, Macao, and Southeast Asia; the savoury hogs of Bama Yaozu Autonomous County and Huanjiang County, which are smaller, with crisper skin and leaner meat, and which make specialty high-quality roast suckling pigs; the beef cattle of Huanjiang County, which have tender meat and are famous as a restaurant delicacy; and the large and small sheldrakes of Jingxi County, which have a high percentage of lean meat, grow fast, are suitable for both roasting and curing, and compare well with Beijing ducks. In addition, there are the ponies of the Bose region, which were recorded in the Han and Song dynasties: the bronze horses unearthed among Han dynasty artifacts are this same kind of horse. They stand only 110 to 120 cm tall and are admired and well-received by people touring national zoos. Here it is worthwhile to mention the hybrid water buffalo bred in Guangxi for both dairy and meat purposes: They produce an abundance of good-quality milk that has a delicate tasty flavor, high nutritional value, 7 to 8 percent butterfat, and 18 percent dry milk solids. A cow, in a good season, can produce more than 2,000 kg of milk, and at 24 months a bull weighs more than 600 km. These well-known, specialty, and superior products are economically valuable, strongly competitive, and well-received by urban and rural populations in China. They also enjoy high reputations on the international market.

The livestock industry in Guangxi has achieved sustained growth in the wake of progress in rural economic reform. In 1985 large livestock was up 29.24 percent over 1980, live pigs had increased 30.38 percent, poultry had grown 129.7 percent, and total meat output was up 52.11 percent. In keeping with this we have developed a number of canning, shoe manufacturing, and feather and down processing plants. We have supplied the market with ever greater quantities of meat, poultry, eggs, milk, and processed goods, and we have provided a number of superior products for foreign export. More than 60 livestock and poultry farms have been built throughout Guangxi, and at the same time we have obtained gratifying results in veterinary science research. There are 37 items that have won major state or autonomous region science and technology achievement awards. We have laid the foundation for further growth in animal husbandry and livestock-product processing industries.

In recent years we have made rapid progress in introducing foreign capital and initiating economic and scientific and technical cooperation with other nations. All told, we have introduced improved breeds of cattle, including Holstein-Friesian cattle, Cuban cattle, Shaxiwa [3097 6007 3907] cattle, Xindi red oxen, Shorthorns, and Mola [2302 2139] and Nili [1441 6849] water buffalo; swine, including Yorkshire, Berkshire, Landrace, and Duroc varieties; and assorted improved breeds of poultry. Qian Jiang Model Livestock Farm, which New Zealand helped to build in 1980, has used seed selection to breed a number of improved forage grasses suited to local sowing, and has developed dual-purpose oxen for dairy and meat production. Since 1983 the World Bank Agriculture Fund has fostered cattle and poultry development. This year the Guangxi Associated Industrial and Commercial Livestock Company has agreed to cooperate with the Western Australia Farmers' Co., Ltd., to develop poultry and introduce dairy goats, pigeon breeding, and forage grass, and it is also in the process of negotiating with the Baijia Company of Singapore to set up a feed processing plant. At the invitation of Queensland Premier Peterson of Australia, Wei Chunshu [7279 4783 2631], chairman of the people's government of Guangxi, paid an official visit to Queensland in October 1985 and opened channels of cooperation with Australia for developing animal husbandry in our region. In October 1985 Professor Maniwan [7456 1441 1238], of Thailand's Zhulalonggong [2612 2139 7172 0501] University conducted an academic exchange with Guangxi for the second time. The U.S. 4-H Club has sent two young university graduates to the Guangzhou Animal Husbandry Institute to engage in scientific and technological exchange. We have also established initial contacts and initiated scientific and technological exchanges and professional consultations with animal husbandry research units and commercial organizations from Pakistan, Canada, Italy, the Federal Republic of Germany, and Japan.

Right now Guangxi's animal husbandry and livestock-product processing industries are facing new complications. In the wake of growth in the national economy and improvements in urban and rural standards of living, we need more high-quality livestock, poultry, and processed goods, we need more high-quality fertilizer for agriculture, and our foreign trade and export requirements have also increased. Consequently, the Guangxi Zhuang Autonomous Regional People's Government has made livestock industry development a major priority in national economic growth. In readjusting rural industrial composition we are calling for fuller exploitation of Guangxi's advantages and even greater increases in livestock, poultry, aquatic, and processed goods. We can foresee even greater growth in the livestock industry during the 7th 5-Year Plan. To lend vigorous support to the thousands of households developing animal husbandry, we are now adopting measures in breed improvement, feed production, disease prevention and control, and scientific research and technology. Simultaneously, we must set up a number of pig-breeding farms, cattle-breeding farms, chicken-breeding farms, feed-processing plants, and livestock-product processing plants.

In order to allow significant growth in Guangxi's animal husbandry and livestock-product processing industries we must introduce capital, technology, and know-how. Here I will propose some projects from which overseas investors may choose. Guangxi is known as a land of 8 mountains for every 1 waterway and farm field: it is well suited for raising herbivorous animals. We welcome collaboration with foreign capital to set up ranches and develop pastoral areas to raise dairy and meat-producing cattle and goats, as well as rabbits, turkeys and so forth. Guangxi also has more than 2 million head of water buffalo, and we have been successful in improving breeds for dual-purpose milk and meat production. This area may be further developed and exploited. Guangxi raises more than 20 million head of swine per year, and there is an urgent need to improve the ratio of lean meat: lean-meat hog farms can be set up. Another possibility is to initiate mechanized chicken and pigeon farms, the former including both egg-producing and meat-producing farms. As for livestock-product processing, introductions of equipment and technology are needed to process milk, meat, leather, feather, and down products. In feed production we need to set up feed-compunding plants; cattle, horse, and sheep feed plants; and feed-additive plants.

We welcome Hongkong and Macao compatriots and overseas individuals to come to Guangxi and set up livestock and poultry farms, animal-product processing plants, and feed-processing plants. We also welcome individual cooperation to supply improved processing equipment or offer technical collaboration. Business can be discussed with the Guangxi Zhuang Autonomous Regional Associated Industrial and Commercial Livestock Company, or academic and breed improvement exchanges can be conducted with the Guangxi Animal Husbandry Institute, the Guangxi Veterinary Medicine Institute, or other units. Based on the principle of equality and mutual benefit we will offer special preferences and considerations in land use, taxation, collaborative time limits, raw materials, fuels, power supply and so forth. Legal profits earned on foreign capital are guaranteed to be remitted, and the forms of cooperation are diverse and flexible: one can opt for joint venture production and cooperative managenent, or one can adopt compensation trade. Some projects are operated as sole-proprietor enterprises as well. One can also introduce improved breeds and equipment, or techniques, formulas, know-how and other technological software. We sincerely welcome friendly aid.

12510
CSO: 4007/433

SPECIALIZED VILLAGES KEY TO RURAL COMMODITY ECONOMY

Guiyang GUIZHOU RIBAO in Chinese 3 Jun 86 p 2

[Article by the Rural Work Department of the Guizhou Province CPC Committee: "Specialized Villages--Embryo of the Regional Commodity Economy in Rural Areas"; portions within slantlines in italics]

[Text] According to statistics from a preliminary survey of 68 counties (special districts, districts) in Guizhou Province, the number of specialized villages in rural areas has grown to 1,006. The appearance and development of specialized villages indicates that the rural commodity economy has entered a new stage and represents the trend toward the development of regional cooperative economic organization with enormous vitality.

Of these 1,006 specialized villages, 36.7 percent are engaged mainly in crops, 4.2 percent in breeding, 12 percent in forestry, 12.7 percent in processing industries, 12.2 percent in mining, 9.5 percent in the construction materials industry, 2.8 percent in the construction industry, 2.9 percent in the shipping industry, and 7 percent in commerce and services. According to incomplete statistics from Zunyi, Tongren and Bijie prefectures, the peasant households in specialized villages account for 1.19 percent of all peasant households. With the exception of a few former vegetable-raising teams in suburban areas, most of these specialized villages were restored and developed over the past few years. They are distributed primarily around cities, near industrial and mining regions, and in areas with convenient communications. Some development-oriented specialized production villages also have appeared in mountainous regions with abundant resources.

I. Factors and Conditions in Their Formation

There are common factors as well as special conditions in the formation of specialized villages. The overall situation is one in which: 1) /Continual relaxation of party policies regarding the rural economy is the prerequisite for formation of specialized villages./ Some villages, for example, had a history of several hundred years of involvement in mining and handicrafts. The effects of "leftist" policies of the past however, meant that "horses and carts belonged to the teams" and "labor belonged to the fields." Many skillful craftsmen, experts, and old hands were shifted into agriculture. Implementation of several of CPC Central Committee Resolution No 1 over the past few years has restored these skilled people to their old activities and rapidly restored and developed a group of specialized villages. 2) /Continual intensification of reforms in economic systems in rural areas is an intrinsic motive force in the formation of specialized villages./ Survey data indicate that after implementation of output-related household responsibility systems, there was a substantial increase in the amount of surplus labor power and labor time in rural areas. This was especially true of cities and towns, areas around factories and mines, and central flat dam regions with their large populations and limited land, where the proportion of surplus labor generally exceeded 50 percent. They actively opened up new production activities, transformed industrial structures in rural areas and broke ground for specialized villages to plant cash crops, process farm and sideline products, set up construction and construction materials industries, commerce and services, and so on. 3) /Rather good resources, technologies and sales markets are essential conditions for the formation and development of specialized villages./ Survey data clearly indicate that impeded communications and poor transportation in Guizhou made it difficult to move raw materials to production areas, and it is impossible to "cook without rice." During the major development of commodity production, products without good technologies, sales outlets for their production, good quality, and low prices inevitably were abandoned during competition. This led to the gradual appearance of specialized villages wiht abundant raw materials supplies for their products, superior production technologies, and vast sales markets. 4) /Development-oriented, educated, "capable people" who understand technology and who are good at administration and know how to manage are the key to formation and development of specialized villages./ Inspired by the party's policies of bringing prosperity to the people; a group of grassroots-level cadres, intellectual youth returning to their villages, retired military personnel, and skilled artisans good at traditional techniques who have specific cultural knowledge and technical skills and who are good at management and administration have been bold in exploration, dared to take risks, and were unafraid to take new roads to manage certain types of production and become specialized households. With their drive and assistance, households led areas and areas led villages to develop group after group of specialized villages. 5) /Attention by leaders guarantees the formation and development of specialized villages./ The formation process of many specialized villages indicates that party and government leaders and relevant business departments did a considerable amount of work in conscientious implementation of party principles and policies, formulation of plans to increase harvests and bring about prosperity, strengthening social services, providing the necessary economic support, providing legal protections, ideological and political education, and other areas, which guaranteed the healthy development of specialized villages.

II. Small Base Areas for Commodity Production

Specialized villages "focus on one industry and work at others" for specialized production of large amounts of commodities with a higher percentage of marketed products. Some specialized villages are small local commodity production base areas that have opened up a new road for large-scale development of commodity production in rural areas.

Statistics for 371 specialized villages in 44 counties indicate that they received incomes of 38.51 million yuan from special products during 1985, equal to 69.1 percent of their total incomes, and they sold 34.63 million yuan in special products, equal to 90.33 percent of total income from sales of their products. An average of 426.40 yuan per person was earned from product sales, which was 3.2-fold higher than the per capita income of 100 yuan from product sales in a survey of fixed agricultural management points (1,839 village groups) throughout Guizhou. Bahao Village in Yonghe Township, Anlong County, which mainly produces cane sugar, supplied a per capita average of 475 jin of cane sugar in 1985. Namai Village in Youmai Township, Wangmo Bouyai-Miao Autonomous County, which mainly produces bajiao bananas, supplied 1 ton of (bajiao) bananas per capita in 1985. In Panlong Township in Chishui County, which mainly is engaged in forest management, the households sold an average of 37.8 cubic meters of standard timber and 647 lengths of [illegible] bamboo to the state between 1981 and 1985, and their income from dealing in topslogs, branches, stumps, and other timber products averaged 2,483 yuan per household. The village also afforested more than 6,500 mu, 70 percent of it cultivated land that was reverted to forest. The impetus of the specialized villages has caused specialized townships and towns with even greater productive vitality and more commodities to appear.

III. Promote Readjustments in Industrial Structures in Rural Areas

With the exception of two villages in which grain production is the predominant industry, the remainder of the 1,006 villages gradually shifted more than 50 percent of their surplus labor power and surplus labor time out of crops and took up raising cash crops, breeding, forestry, construction, construction materials, mining, processing of farm products and other activities, which in turn stimulated the development of shipping, commerce, and services. This transformed the situation in which most of the peasants in these villages focused on raising their own food and encouraged comprehensive invigoration of the rural economy. A survey of 213 specialized villages in 12 counties (cities) in Zunyi Prefecture showed that they had a total labor force of 16,400 in 1985 and that 48.93 percent worked in crops while 51.07 percent worked in breeding, forestry, and secondary and tertiary industries. This is a basic change in the ratios among incomes from each activity as a portion of gross income. Income from crops accounted for 33.34 percent of gross income, which was 21.18 percent less than the survey of fixed agricultural management points in Guizhou, while income from other activities accounted for 66.66 percent, which was 22.19 percent higher than the provincial average. Even more gratifying was that secondary and tertiary industries sprang up after these villages integrated crops, breeding, and processing, and unified agriculture, industry, and commerce for comprehensive administration and all-round development. Pingfeng Village in the suburbs of Zunyi City utilized its geographic position, and labor and capital resources to combine good vegetable planting with mutual progress by collectives and individuals. The result is that 71.6 percent of the labor force is employed in services and handles activities whose income accounts for 81.8 percent of gross income. Maojiaqiao Township in Xiuwen County has worked for the past several years to develop a construction materials industry focused on brick, concrete, lime, sand, and fire-resistant materials to form a new type of rural industrial structure. The township's income from agricultural crops as a proportion of GUIAO declined from 62 percent in 1978 to 15.74 percent in 1985, while the proportion of output value from industry and sideline production rose from 30.58 to 75.18 percent. The development of secondary and tertiary industries provides effective support to grain production. Statistics from 622 specialized villages indicate that per capita grain production was 558.2 jin in 1985, which was 27 percent higher than per capita grain production for all of Guizhou's peasants.

IV. Promote the Transition from Traditional Rural Technologies to Modern Technologies

Most specialized villages at present were developed on the basis of specialized households. Management of production in some areas is rather centralized and integrated, and market competition is intensifying. To improve their competitive abilities, they have invited people in, sent others out to learn, studied techniques with masters and asked them to take on apprentices, replaced equipment, reformed techniques, and integrated traditional technologies with modern ones. This has lowered costs and improved product quality, created well-known brands and opened up sales routes. Some specialized flourmaking villages converted their manual or semimechanized operations in grinding flour, making noodles, and other procedures into operations powered by electric motors. Other specialized construction materials villages have grown from manually quarrying sand to mechanical quarrying, from using animal power to tamp clay and manual labor to make bricks to mechanical brickmaking, from making bricks in small earthen kilns to making bricks in large continuous kilns, and from baking limestone in earthen kilns to limestone pulverizing plants. Some specialized villages that make noodles from bean or sweet potato starch have adopted electrical starch grinding, filtering starch dregs with vibrating grates, and processing starch using electric centrifugal dry shedders. The quality of the noodles has improved from coarse to fine, from yellow to white, from curved to straight, and from brittle to pliable, and they are being sold throughout Guizhou and other provinces. Gutun Village, a specialized bajiao banana and taro starch noodle-processing village in Longguang Town, Anlong County, had only 34 pieces of processing machinery when it implemented the output-related household responsibility system in 1980. The number has risen to 64 now and they also have bought a truck and 8 walking tractors. Eight specialized pig-raising villages in Yuping County shifted from single feeds to compound (mixed) feeds and they changed from traditional mature grains as a feed to raising pigs on soft peanuts. They also selected the best local varieties, which allowed them to shorten the raising period and increase slaughter rates and pork outputsrates.

V. Accelerate the Pace of the Peasants' Move Toward Common Prosperity

These specialized villages basically continue to engage in labor-intensive industries. Moreover, they focus on one industry with economic diversity, so they can retain more labor power and provide wider employment opportunities. This and the added benefits of their good economic results and high labor productivity have raised peasant income substantially and standards of living are being universally improved. Statistics from a survey of 371 specialized villages indicates that their gross income in 1985 was

55.77 million yuan in 1985, an average of 620 yuan per capita and a net average per capita income level of 436.60 yuan. Their per capita gross incomes and net incomes were 115 and 98.5 percent higher, respectively, than the survey of fixed agricultural management points throughout Guizhou. Xiongjiazhai Village in Guanyinqiao Township, Bijie County formerly was a poor village with per capita incomes below 100 yuan. After setting up the output-related household responsibility system, the village utilized its advantageous conditions of being in the city suburbs to develop construction materials production. They were concerned with using the talents of skilled people and also made production arrangements for elderly, retired and weak peasants, and peasants who were not good at administration to engage in production according to their own capabilities. Moreover, they showed concern for households enjoying the "five guarantees" [childless and inform old persons who are guaranteed food, clothing, medical care, housing and burial expenses by the township] and took a big step forward on the road toward common prosperity for all of the village. Now, 27 of the village's 29 households have built new reinforced concrete or brick and lumber houses, and all of the adults have brought wristwatches, color televisions, Jialing motorbikes, bicycles, sewing machines, radio-recorders and other items into Xiongjiazhai. Per capita incomes in Gutun Village have surpassed 1,000 yuan and substantial changes have occurred in the peasants' lives. The village had 50 poor households in 1979 but 45 of them now have thrown off their poverty and become prosperous. These specialized villages have taken the route of common prosperity and have become examples for all rural areas of moving from poverty to having enough food and clothing and moving on from the latter to being relatively well-off.

VI. They Have Pointed out the Direction for Development of Regional Cooperative Economic Organization

Specialized villages generally get their impetus from village and cooperative (agricultural economic associations and management stations) cadre leaders. They unify or divide up production as appropriate and adopt multilayer diversified administration so that village cooperatives, associations, and individuals move forward together. Doing so fully utilizes the superiority of the collective economy and the initiative of household management. Many specialized villages withhold some of the capital from profits in the collective economy and from public accumulation fund contributions to the village by peasant households. The capital is used for buying production equipment and for construction and maintenance of farmland water conservancy projects. They turn over retained funds for the peasants' and take the route of "using industry to support agriculture." After reinforcing the collective economy, village economic associations in Gaoqiao Village in Gaoqiao Township in the Zunyi City suburbs unified payment of the living expanses of all of the village's families of revolutionary martyrs and "five guarantee" households, the school entrance fees of peasant children, various types of deductions, and the agricultural tax. Some specialized villages have strengthened land management and are encouraging the centralization of cultivated land for which the peasants have assumed contractural responsibility into the hands of skilled farmers for intensive cultivation. For service projects that single households cannot manage or cannot manage well, many specialized villages are managing them themselves, or they may organize the masses into associations or set up joint management by supply and marketing cooperatives, township and town enterprises, state-run factories and mines, scientific and technical units, and so on to provide good services before, during and after production. A group of specialized households have appeared during the restoration and development of traditional duck-raising production in Aishan Village in Maliu Township, Yinjiang County. To overcome the "small and incomplete" problems of production in specialized households, village cadres organized peasant households to form the Aishan Duck-Riasing Company. They established four groups for hatching eggs, raising ducks, processing, and purchasing and sales that have integrated management of each of the activities. This has perfected self-service systems and encouraged the development of the regional economy in the direction of specialization, commercialization, and socialization.

VII. Correct Guidance, Active Support

The specialized villages have revealed a new level in the development of the division of labor and industry in rural areas and they are the foundation and embryo of regionalized specialized production. We should provide correct guidance and active support to assure their healthy development. One thing is to strengthen leadership. The major aspect of larger harvests and prosperity is to expand production outlets for the peasants through adaptation to local conditions and household situations. There should be ideological mobilization and significant implementation of drop measures. Areas that are rich in resources and that have marketable products should adroitly guide their actions according to circumstances, strengthen leadership, summarize experiences, commend advances, reinforce planning, overcome blindness in action, and solve problems with capital, technology, and contractual transfers of cultivated land. They should focus on advantageous industries, with village-run, association-run, and household-run activities rolling along together to accelerate the pace of formation of specialized villages. The second thing is that all activities and industries should take the initiative to provide good social services. The main obstructions at present to the formation and development of specialized villages are the failure of raw materials supplies, product sales, production technologies, and other links to keep pace. We should continue to intensify reforms in aspects and links not adapted to the development of commodity production and strive to establish as soon as possible the corresponding multilayer, multiform and multicomponent service networks to improve service capabilities and promote the consolidation and development of specialized villages. The third thing is to protect the legal rights of specialized households and specialized associations. Specialized households and specialized associations are the foundation and pillars of the formation of specialized villages. They are responding to the party's call and taking the lead in creating prosperity. The main current is a good one and the illegal behavior of a few people should not be seen as the main current. The fourth thing is to do good ideological and political work. Party organizations should be established for specialized villages and specialized associations to achieve a dual focus on material and spiritual civilization.

The members of specialized households and associations should be taught to respect party and state policy directions to achieve civilized production and civilized business management and prevent adulteration and deceit, crude processing and reckless manufacture as well as damage to the interests of the state, collectives, and consumers to assure that the rural economy advances in a socialist direction. Second, we must teach that prosperity does not mean forgetting the state or collectives and that those who become wealthy first must not forget to assist the poor. We must work actively to complete state-tax and collective-retention tasks and motivate and assist the masses to achieve common prosperity, especially through support to poor areas to increase harvests and throw off their poverty.

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CSO: 4007/485

IMPROVED CROP COMPOSITION, ACREAGE GAINS REPORTED

Shijiazhuang HEBEI JINGJI BAO in Chinese 19 Apr 86 p 3

[Article by Nie Bingxi [5119 0365 5045] and Liu Zhanjing [0491 3277 5464]: "A Purposive Sample Survey of 42 Counties Indicates that Crop Area in Hebei in 1986 Has Increased Over Last Year, and Grain-Based Planting Composition Has Become More Rational"]

[Text] In order to understand the arrangement of crop area in Hebei in 1986, we recently conducted a purposive sample survey of 2,045 farming households in 409 townships and villages located throughout 42 counties. The results are as follows:

I. Grain Area Has Increased, Acreage Sown in Cash Crops Has Decreased, and Other Crop Areas Have Expanded

In 1986 there will be 2.1 percent more crop area in Hebei than there was last year. Grain acreage will rise 3.8 percent, including a 10.4 percent increase in wheat and a 120 percent expansion in barley. Corn will rise by 8.4 percent and soybeans will expand 11.1 percent. The reasons for growth in grain acreage are as follows: first, various policies and measures promoting stable growth in grain production have begun to play a role; second, due to a significant drop in the scale of cotton production, some cotton land has been converted to grain land; third, the livestock industry has developed rapidly and the quantity of grain used in fodder has increased; fourth, grain markets have expanded somewhat; fifth, the market price of grain has risen rather rapidly.

Cash crop acreage will decline 6.0 percent from its 1985 level, including a 24.8 percent drop in cotton acreage. However, land sown in oil-bearing crops will grow 11.1 percent, and this will include a 21.8 percent rise for peanuts and a 100 percent increase in rapeseed. The causes of the continued large-scale decline in cotton acreage are that the assigned procurement quota base figure has been low, prices have been dropping, cotton grades have been forced down in procurement, and the market has been depressed. The reasons for the large-scale increase in peanut and rapeseed acreage are, first, to make up for the decrease in cottonseed oil, and second, to raise income.

Other crop acreage will increase 16.3 percent, including a 13.4 percent expansion in vegetables and a 29.0 percent expansion in melons grown for fruit. The causes of vegetable and melon expansion are as follows: first, because living standards and consumption levels are constantly rising, staple food costs have declined and non-staple food costs have risen; second, market price quotations and the market in general look good.

A Planting Composition of Grain, Cash Crops, and Fodder Crops Is Beginning To Take Shape

Investigation indicates that in readjusting planting composition Hebei has begun to realize coordinated growth of grain crops, cash crops, and fodder crops. We have first fulfilled the prerequisite of steady grain growth, reflecting the fundamental principle that grain is our most basic foundation. The area of land occupied by grain acreage throughout Hebei essentially meets the 70 million mu requirement proposed by the provincial government. It is predicted that if 1986 is a normal harvest year the total grain output in Hebei will surpass 40 billion jin.

Except for the planned reduction in cotton, other cash crops have all been expanded significantly. This not only essentially makes up for the drop in income concomitant to the reduction in cotton acreage, more importantly it changes the "uniformity" of past exclusive grain cultivation and perfects our planting composition. Moreover, successive large-scale reductions in cotton acreage 2 years running also indicate that the farming masses have already begun to organize production based on market demand.

The steady growth in grain output has promoted rapid expansion in the livestock industry, and this, in turn, has promoted further steady increases in gross grain yield. Gross grain yield is directly proportional to the rate of fodder grain expansion: the higher the gross grain yield, the faster fodder grain will grow; the larger the proportion of fodder grain, the higher the gross grain yield. This inherent relationship constitutes a favorable mini-cycle.

However, investigation also indicates that some problems persist in Hebei planting composition. One problem is that on top of last year's 18.8 percent reduction in cotton acreage there has been a further 24.8 percent decrease this year. As a major cotton-producing province, Hebei should give ample consideration to the problems that this decline may bring. Another problem is that melon production has expanded too sharply: last year it grew 51.2 percent, and this year it has increased another 29.0 percent. It is very possible that melon supplies may outstrip demand.

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CSO: 4007/441

RESEARCHER SAYS CHARACTER OF AGRICULTURE MUST BE STRENGTHENED

Zhengzhou HENAN RIBAO in Chinese 19 May 86 p 2

[Article by Chang Jingwei [1603 2529 5588] guest researcher at the Provincial Rural Development Research Center: "We Must Strengthen the Character of the Livestock Industry; an Urgent Unsolved Problem for Henan Province's Livestock and Poultry Production"]

[Text] Recent declines pork and egg prices on the markets of Henan Province have affected the enthusiasm of peasants for raising livestock and poultry. Pork and eggs account for, by value, 70 to 80 percent of Henan Province's livestock industry and thus affects the entire livestock industry. Therefore understanding the reason for this situation is most important.

As everybody knows, the quality of a product and its low price makes it win out over other products of the same kind in market competition or be the sole survivor in a poor market. It defeats its competitors by its character. People who raise livestock now only consume about 30 percent of their production and sell the most of it on the market. However since China's agricultural economy has just emerged from subsistence and entered the realm of producing for the market, the livestock industry has just turned from "no capital accumulation" production, which does not consider profitability, toward seeking profitability. The distinctive character of the livestock industry is very low and it is very hard for the industry to adapt or to gain a foothold in an ever-changing market. Let us take pork as an example. Now the market demands pork with little fat and reasonable prices, but our pork production has much fat meat and little lean and our prices are higher than those in other provinces. Hertofore pork from Henan Province was sold in 16 provinces and municipalities. Over the last few years, prices in those markets have gradually declined. This year, since the gap in prices is very large, only a few hundred thousand pigs have been ordered from other provinces, and as surely as spring follows winter, the contradiction of greater supply than demand became more acute in Henan Province.

If we analyze pork production further we will see more clearly the vital importance of improving character to developing the economy of the livestock industry.

Feed is the foundation of pork production. Feed accounts for more than 70 percent of the cost of pork production. The efficiency of the transformation of feed into pork chiefly determines if one will get a good profit on the market. However let us take a look at the feed transformation situation in Henan Province. 1) One pig growing to 100 kg, according to modern standards of feed transformation, requires 3 kg of mixed feed for every kg of weight gained. However in most agricultural households of Henan Province a pig needs 4 kg of pure feed to gain 1 kg. Thus for every kg of weight gained, the pig in Henan province needs 50 percent more feed. Thus with an annual pig production of nearly 8 million pigs 1.2 billion more kg of feed is consumed. 2) In some advanced countries the proportion of pigs sent to market is between 150 percent and 200 percent [sic]. However in Henan Province the proportion of pigs sent to market is only about 60 percent. If we judge by a standard that calls for 100 percent of all pigs to be sent to market Henan Province raised almost 6 million pigs which "uselessly consume feed and don't grow meat" and stayed in the pigpen. Calculating on the basis of each pit consuming .5 kg of feed daily, the total comes to more than 1 billion kg. 3) Although modern science and technology has several methods for controlling contagious diseases of pigs, because Henan Province's livestock and poultry industries do not do proper preventive work and prevention of contagious diseases, more than 3 million pigs die each year from swine fever and other contagious diseases. If each dead pig weighed 25 kg, more than 250 million kg of feed was lost in feeding them.

These three factors alone were responsible for the waste of 2.5 billion kg of feed every year in Henan Province. This equals 10 percent of the province's grain production. This directly and indirectly increases the costs of pork production. Prices must increase correspondingly to increases in the cost of production. This high prices product lags further and further behind the competition on the national market. Producers not only cannot make a good profit but they are in danger of not being able to sell their goods at all.

Therefore, as pork prices decline if we can vigorously improve the character of the poultry and the livestock industries and lower the costs of pork production we will certianly able to partially or mostly make up for the losses producers have suffered as a result of the decline in prices.

The situation in the production of other kinds of livestock is basically the same as it is in pork production. Therefore, as we confront the problem of the decline in the price of pork and eggs, besides addressing the problems of distribution, processing, storage and transportation, etc., we must vigorously strengthen the character of the livestock industry. If not, although market conditions may improve we will not be able to seize a large market share. Moreover, in the vigorous competition of the world economy, improving the character of the livestock industry will play an important role in creating a livestock industry which will earn foreign exchange.

The key to improving the character of the livestock industry is to change the general policies of production and management from increasing the number of pigs in the pigpen to seeking profitability. In order to achieve the overall objective of greater profitability, the livestock industry should adopt superior varieties and improve the present inferior varieties in order to give the livestock and poultry industries higher quality and greater productivity. Adjust the mix of livestock production to meet market demand. Produce large numbers of livestock which can be sold on the market. Adapt better to changes. Replace traditional feed management techniques with modern feed management and feed mixture technology to use feed as efficiently as possible. Provide suitable conditions for livestock and poultry according to the environmental requirements of the livestock and environmental conditions so that livestock will retain the productive capacity that it should have. Strengthen the control of contagious diseases in herds of livestock and measures to preserve health. Regularly instruct livestock management and make sure that advanced livestock S&T is promptly applied to production. Develop and improve the pasture resources of Henan Province. Use agricultural byproducts thoroughly and rationally in order to boost poultry and livestock production. If this work is done properly the distinctive character of the livestock industry will become much stronger and will bring producers good profits.

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NO CHANGE IN LAND CONTRACT SYSTEM STRESSED

HK140315 Zhengzhou Henan Provincial Service in Mandarin 2300 GMT 13 Sep 86

[Text] According to HENAN RIBAO, on 9 September Liu Zhengwei, deputy secretary of the provincial party committee, commented on the problems reflected in a number of readers' letters to the paper. He pointed out: We have explicitly announced to the peasants that there is no change in the rural land contract responsibility system. We must encourage the peasants to actively invest in the land and do a good job in sowing the wheat without missing the season.

Since the beginning of autumn, a number of peasants in Hebi, Zhengzhou, Xuchang, and Pingdingshan have written to HENAN RIBAO reporting that there is a rumor in some places that the responsibility fields being farmed by the peasants are to be readjusted. Many peasants are very worried over this, and preparations for wheat sowing have been affected.

Comrade Liu Zhengwei said: We must draw the attention of the party committees and government at all levels to this situation. To practice the contract responsibility system with payment linked to output, based on the household, is our party's long-term policy in the rural ares. It is necessary to proceed from reality when readjusting the plots of land and gradually concentrating the land in the hands of able farmers. It is essential to listen to the masses' views and proceed with caution. Such action must not be taken when the majority of the masses have not asked for it.

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CSO: 4007/2

COMMODITY WHEAT BASES SET UP

Beijing NONGMIN RIBAO in Chinese 8 Jul 86 p 1

[Article: "Henan Province Will Establish Wheat Commodity Grain Base Areas--300 Million Yuan Will Be Invested During the Seventh 5-Year Plan To Transform Middle- and Low-Yield Fields"]

[Text] Henan Province, one of China's main wheat-producing areas, recently decided to invest 60 million yuan during each year of the Seventh 5-Year Plan to make full use of its wheat production advantages by building middle- and low-yield fields in 40 counties into a base area for commodity grain production.

During a visit to Henan in January 1986, Comrades Zhao Ziyang and Tian Jiyun [3944 4764 0061] praised the ideas of the Henan CPC Committee and Henan Provincial People's Government regarding the construction of a base area for wheat commodity grain production in Henan and they warmly encouraged the people of Henan to strive to complete this enormous task. Afterward, the Henan Provincial People's Government organized the relevant departments and specialists to carry out comprehensive planning and scientific debate concerning the construction of a base area for commodity grain production focused on wheat. The feeling was that Henan definitely has advantageous conditions for the development of wheat production. Henan has ranked first in China in area planted in wheat, total output, and percentage of marketed products since 1979. Prefectures with average yields of more than 570 jin per mu and counties with average yields of 600 to 700 jin per mu or more have appeared. There is a rather large area of middle- and low-yield fields, 40 counties with low and unstable output in eastern, northeastern, southwestern, and other parts of Henan. For this reason, the government of Henan has established a Wheat Base Area County Construction Office to invest 60 million yuan each year or a total of 300 million yuan in this region during the Seventh 5-Year Plan that will be focused on farmland water conservancy construction, control of main river channels, organization of attacks on key scientific research topics, and establishment of comprehensive service systems. After the base area is built, these 40 counties will be able to increase their annual wheat output by 1.5 billion jin, which will play a definite role in sustained and stable growth in grain in Henan Province.

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CSO: 4007/480

PROBLEMS IN PIG PRODUCTION, SALES

Zhengzhou ZHONGGUO CHENGXIANG XINXIBAO in Chinese 22 Jun 86 p 1

[Article: "An Acute Contradiction In Pig Production, Supplies, and Sales Persists in Henan Province"]

[Text] An acute contradiction in pork production, supplies and sales persists in Henan Province. There are four main problems: 1) Protected prices stipulated in the "Urgent Notice" from the Henan Provincial Government have not been implemented in some regions and the purchase price for pigs remains at only about 1.40 yuan per jin in most regions and has dropped to around 1.20 yuan in some areas. 2) Castration of sows still is very serious and social inventories have continued to decline. 3) Market prices for grain still have not fallen back, so most regions do not utilize feed grain for pigs and contract orders for pigs have declined. The result is that the peasants continue to be worried about selling and are not enthusiastic about adding to their inventories. 4) There are serious shortages of circulating capital and extreme problems with loans in the food production system throughout Henan, which has directly affected the development of pig purchasing and selling activities.

Given the situation outlined above, the Henan Province Commerce Administration Commission decided to adopt additional measures: 1) The province and the prefecture will provide a subsidy of 0.02 yuan for shipping fees for all pigs shipped out of Henan during May and June 1986. In addition, counties will be the units for the allocation of an additional provincial subsidy of 2 yuan for each pig sold in excess of the amount over the same period in 1985. 2) Permission is granted for the sale at reduced prices of frozen pork that has been stored too long in certain cities. Losses from the lower prices will be partially absorbed by the enterprises, and local areas will compensate for a portion, with the province subsidizing a portion as needed. 3) In regions where "difficulties in selling pork" continue to be acute, we should urge clearing out stocks, putting storage locations in order and combining areas to restock some frozen meat, with each responsible for their own profits and losses and appropriate subsidies provided by the province. 4) Submit plans to commercial departments for arrangements to ship forzen pork out of Henan and act as their agents to store a portion of the frozen pork. 5) Continue to follow the original principle of exemption from the collection of business taxes for sales of frozen pork during May and June 1986.

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CSO: 4007/480

MEASURES TO SUPPORT POOR HOUSEHOLDS

Beijing NONGCUN GONGZUO TONGXUN [RURAL WORK NEWSLETTER] in Chinese No 4, 5 Apr 86 p 35

[Article: "Hubei's Six Measures To Support the Poor"]

[Text] The Hubei Provincial CPC Committee and Government recently adopted six measures:

1. Major grain support. Each year, 500 million jin of the parity grain allocated to Hubei Province by central authorities annually is to be sold at a price equal to the unified purchase price plus expenses (not to exceed 0.02 yuan per jin) to guarantee per capita grain ration supplies of 400 jin in mountainous regions and poor areas.

2. Special arrangements will be made for capital construction projects in industry and agriculture and investments in capital construction will be increased. Beginning in 1986 and extending to 1990, 140 million yuan in additional funds will be invested in capital construction in industry and agriculture in mountainous and poor regions. In addition, beginning in 1986, Hubei Province financial administrators will make arrangements for 30 million yuan in turnover funds each year over the next 3 years to support construction in mountainous and poor regions.

3. Strive to support mountainous and poor regions in developing circulation and promoting the commodity economy. While making use of the role of state-run commerce, supply and marketing cooperatives, and materials supply markets as primary channels, we also should make substantial efforts to develop collective and individual commerce and specialized shipping and sales households. Beginning in 1986, an additional 20 million yuan in financial turnover capital will be used for mountainous and poor regions.

4. Assist mountainous and poor regions to develop science and technology, education, and public health activities. Assistance to mountainous and poor regions in popularizing primary school education should be combined with strengthened construction of vocational middle schools and key schools as well as assistance in setting up a key vocational middle school, a middle school instructor or teacher training school, a peasant technology school, a key upper middle school, a key lower middle school and a key elementary school for each county in mountainous regions. The province will assign

some graduates from institutions of higher education to teaching posts in mountainous regions. In the next 2 or 3 years, the state will make special allocations shifting 3,000 people from civilian-run teachers to public teachers, and wage subsidies for civilian-run teachers in mountainous areas will be increased by 10 yuan per person per month on the basis of existing standards. Beginning in 1986, 2 million yuan in grant funds will be allocated by Hubei Province for concentrated use in construction of district (town) cultural stations. Hubei Province also will adopt measures to solve the problems of the masses in receiving medical care as quickly as possible.

5. Exemption from all taxes. All poor townships in mountainous and reservoir regions are exempt from the agricultural tax. No state treasury subscription tasks are to be assigned to poor townships and peasants in reservoir regions. Beginning in 1986, township and town enterprises in mountainous regions can make pretax repayments within 3 years. Those commercial enterprises in mountainous areas that would have definite problems in paying taxes over 2 or 3 years can apply to the province for exemption from business taxes on wholesale links. Tax exemption should be provided for credit cooperatives in poor villages and for cooperatives with policy-related losses.

6. Provide financial subsidy grants ahead of schedule. The past method of monthly allocations used in the 31 mountainous counties (cities) with inadequate local financial resources and expenses in excess of revenues that require provincial financial administration subsidies should be changed and the 189 million yuan in financial subsidy grants should be allocated ahead of schedule to increase their financial flexibility and decision-making rights concerning production arrangements and increased income.

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CSO: 4007/480

USE OF NEW TECHNOLOGY URGED TO TRANSFORM FARMING

Wuhan HUBEI RIBAO in Chinese 4 Jun 86 p 2

[Commentary by HUBEI RIBAO staff reporter: "It Is Well Worthwhile To Use New Technology To Transform Traditional Agriculture"]

[Text] One facet of new developments in agricultural science and technology has sparked interest among many cadres and other people in Hubei: the burgeoning technology of electronic computers and bioengineering is gradually being integrated and merged here with traditional farming techniques, spurring new changes in an agricultural tradition thousands of years old. This is encouraging people to work hard and devote major efforts to disseminating and applying new technology, thereby accelerating the process of agricultural modernization.

This reporter is happy to know that some localities in Hubei have achieved preliminary success using electronic computers to furnish agronomic steps leading to high crop yields. This was accomplished through collaboration between the Chinese Academy of Agricultural Sciences and the Hubei Department of Agriculture and Animal Husbandry. They employed microcomputers to calculate a technique for making economical applications of nitrogen, phosphorous, and potassium on rape crops. Using this technique on 3 rape crops over a total 1.79 million mu in 3 years, they succeeded in solving rape malnourishment problems brought about by a long-standing emphasis on nitrogen fertilizer application, thus raising rapeseed production over 77 million jin and increasing income by more than 30 million yuan. Consequently, in applying fertilizer to rape crops we have entered a new phase of planned, fixed quantities. At the Dongxi Hu Agricultural Sciences Institute in Wuhan I heard something interesting: scientific and technical personnel used microcomputers to select a high-yield culture pattern using improved hybrid rice breed "Shanyou No 63." When used as a demonstration on 1,000 mu of paddy land last year this brought a 10 percent increase in yield and a 15 percent increase in earnings, sparking interest among many households in improved breeds. This spring, farmers sought to buy as much as 1 million jin of improved varieties--six times more than existing reserves at the Agricultural Sciences Institute.

In Mianyang County computers have been used to readjust the distribution of agricultural crops, providing agriculture with a scientific program for macroeconomic policy decisions. Results have been spectacular. In 1984 the scientific and technical personnel concerned divided all 1.46 million mu of land in the county into sections, and then entered into the computer for analysis 2 million items of collected data on the rural economy and environment and on the ecological environments of 40 kinds of agricultural crops. They then sought the optimum results and most suitable crop varieties for each section of cultivated land. The county government made readjustments based on this plan and in that year the value of cash crop output rose 200 percent over that of the previous year. The method employed in Mianyang County has been scrutinized by the relevant state ministries, commissions, and scientific units. It has been decided to extend this method to test sites nationwide.

In Hubei we have also made rapid advances in recent years applying technical bioengineering research and achievements. Based on statistics taken from the Hubei Academy of Agricultural Sciences, the Hydrobiology Institute of the Chinese Academy of Sciences, and the China Agriculture Society, during the 6th 5-Year Plan Hubei made agricultural applications of some 100 cytoengineering, genetic engineering, and fermentation engineering research gains. During the last 3 years we have increased agricultural income 1.2 billion yuan just by disseminating and applying in production the 20 technological achievements attained by the Hubei Academy of Agricultural Sciences ...

Success in applying new technological achievements is pleasing to both the eye and the mind, and it starts people toward profound enlightenment.

People can see from experience that employing new technology to transform traditional agriculture is a major strategic means of promoting agriculture in Hubei. Integrating and merging new technology with traditional agricultural technology can allow us to attain higher results in agriculture. Agricultural technology has progressed steadily in Hubei since the founding of this nation. Technology employed to reform our tillage system and improve planting patterns and field management has contributed significantly to agricultural development, and it continues to hold an important place in production today. However, in the wake of the agricultural shift toward large-scale commodity production in recent years, we must ensure that agriculture develops at a rapid pace, brings good results, and is strongly competitive. People are feeling profoundly the urgency to adopt new technology in agriculture. Successes already achieved indicate that using computers to readjust agricultural composition can furnish us with a scientific program within a short period of time. Using microcomputers to forecast insect conditions, weather, and output improves accuracy, and using them to select practical agronomic measures ensures a major reduction in investment and a significant increase in yield. Using biotechnology to breed improved varieties, grow rice seedlings, and breed fish shrinks the growth cycle by half and achieves rapid, "factory" propagation. These successes cannot be matched by traditional technology. For this reason, after investigating the situation some experts recommend that Hubei should now move to establish technological and extension systems integrating new technology with traditional technology, and the proportion of new technology should gradually be increased. According to my understanding, Hubei's Department of Agriculture and Animal Husbandry has undertaken a plan to take the lead by turning commodity base counties in this province into a computerized agricultural information network. This will transform the backward state of information organization and transfer in Hubei agriculture.

Applying new technology has been successful, and it has helped people break through the mystery that enshrouds new technology. This has aroused the enthusiasm and initiative of many cadres and people to disseminate and use new technology. For a long time people had no understanding of new technology, so they more or less engendered the view that "new technology is unattainable." Recently the leading comrades concerned visited Mianyang and Dongxi Hu, and they discovered that it is not essential to have advanced scientific research personnel in order to employ microcomputers to readjust farm crop distributions or furnish high-yield cultivation measures; provided that one's education is higher than middle-school level, later additional training is entirely possible. According to my information, based on Hubei's requirements the State Planning Commission has decided to set aside 5 million yuan for use in experimental work employing microcomputers to readjust agricultural composition in Hubei. The provincial government also tentatively decided in March to earmark 1.4 million yuan in matching funds. Within 20 short days after the news got around, more than 50 counties (and cities) had written applications, and many county magistrates had made special trips in the scramble to get a spot in the experimental program. This is indeed a heartening trend.

Everyone knows that new technology is just beginning to be employed in Hubei agriculture. There is still much that remains to be done and many difficulties that must be overcome. The urgent matters at present are to establish a science and technology extension corps to correspond to new technological development, and to accelerate the pace at which existing technical agricultural personnel update their knowledge. There are now 15,000-plus specialized personnel engaged in disseminating agricultural technology, and 90 percent of them have been educated beyond the polytechnic secondary school level. Except for those who are professionally knowledgeable, there are very few who really understand new technology. In the past few years, although the departments concerned have set up some new-technology training classes, due to various factors very few scientific and technical agricultural personnel have started school. We must change this situation quickly.

To accelerate the dissemination and application of new technology we must increase our proportional investment in the effort and construct the essential basic facilities. In Hubei various localities expend tens of millions of yuan per year in disseminating agricultural technology, but very little funding is actually used to disseminate and apply new technology. Most places simply have not considered extensions of new technology, so now we have problem after problem in its application. In the first place we have no facilities, and in the second place we lack the funds; with only our bare hands there is no way to accomplish better things.

To disseminate and apply new technology we must also adhere to a practical and realistic scientific attitude and synthesize experience to accomplish long-range planning and make short-term arrangements. There are now 60 million mu of cultivated land and 40-odd major crop varieties in Hubei. Experts feel that we should give priority to using our limited manpower, material resources, and funds in the macroeconomic agricultural policy that most improves results on cultivated land. As we develop and use new technology to produce superior grain, cotton, oil-bearing, or aquatic crops (or organisms), we should seek to reduce agricultural costs and improve overall unit production results.

The key to resolving the above issues is that all levels of leadership must be concerned. From looking at the successes attained where new technology has been applied, we can see that so long as leaders at all levels truly have the will to accept the challenge of new technology on their own initiative, and so long as they make the task of disseminating and applying new technology the order of the day, many difficulties can be overcome. Besides taking the lead to publicize the crucial importance of applying new technology, the most urgent tasks facing leaders are to carry through and come up with the measures, funding, and specialized personnel agreed upon in planning, and to practically resolve specific problems that arise in applying new technology. Now many counties in Jingzhou and Huanggang Prefectures have assistant magistrates assigned to handle applications of new technology, and they have formulated specific goals and steps for the job. This kind of determined, practical attitude deserves encouragement. We deeply believe that even if there are currently no extensive applications for new technology in agriculture, as people continue to become more knowledgeable, and through great efforts, there are bright prospects for using new technology to transform traditional agriculture.

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CSO: 4007/441

HUNAN CITY EASES WORRIES OF SPECIALIZED HOUSEHOLDS

HK070331 Changsha Hunan Provincial Service in Mandarin 0900 GMT 6 Sep 86

[Excerpt] The Huaihua City CPC Committee and government have paid attention to consolidating and developing the various kinds of specialized households and combines in the rural areas, alleviating the worries of the city's 4,200 specialized households.

In recent years 430 combines and over 4,000 specialized households have emerged in the rural areas of Huaihua City. They have become representatives of the advanced productive forces in the city and leaders in getting rich through hard work. However, certain people recently mistakenly held that since the current stress was on having everyone get rich together, there was no need to support the specialized households. When these households encountered difficulties in production, these could not be solved in good time, and instances of extortion against them even occurred in places. Many specialized households became very apprehensive and doubted the party's policy of enriching the people.

In view of this, leading comrades of the city party committee and government organized 400 organ cadres of the counties, districts, and townships to visit some 130 combines and specialized households to repeatedly propagate the party policies and help them to sum up experiences in getting rich and to solve specific problems. They also organized the public security departments to investigate and deal with cases of writing threatening letters to specialized households demanding money and so on. Thus they upheld the legitimate rights of the specialized households. They also helped to clear the circulation channels in view of the problems encountered by the specialized households in marketing their produce, and encouraged them to develop commodity production.

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CSO: 4007/2

BRIEFS

AUTUMN CROPS--Province-wide autumn-ripening crops are growing well. Currently, 4 million mu of early autumn crops have been harvested in Jiangsu Province with better per unit area yield than last year. Some 50 million mu of autumn grain crops are growing well; the conditions of 8 million mu of cotton seedlings have also improved considerably. Some areas were flooded recently, but cities such as Yancheng, Yangzhou, and Huaiyin have lowered the water level and vigorously allocated and shipped a large quantity of fertilizers and farm chemicals in order to salvage the crops flooded in an earlier time and to reduce the losses caused by the disasters. [Summary] [Nanjing Jiangsu Provincial Service in Mandarin 1000 GMT 25 Aug 86 OW] /9599

CSO: 4007/2

FARM MACHINERY SALES RISE, SPARE PARTS AVAILABLE

Beijing ZHONGGUO NONGJIHUA BAO in Chinese 18 May 86 p 3

[Article by Li Lieliu [2621 3525 2692] and Wei Yuyong [0251 0151 0516]: "General Rise in Farm Machinery Sales in Jiangxi Province"]

[Text] Buying and selling in farm machinery markets in Jiangxi Province has been brisk this year. Between January and early April, the province's farm machinery system purchased a total of 62,282,500 yuan worth of farm machinery, up 24.3 percent from the same period in 1985. Sales of farm machinery totaled 53,644,400 yuan, up 23.5 percent from the same period in 1985. Sales of all categories of machinery increased. Sales of mechanized farm implements totaled 22,459,400 yuan, up 37.3 percent from the same period in 1985. This included an increase by 206 percent, 46 percent and 67 percent respectively over the same period in 1985 in sales of Shanghai Model 50 tractors, hand tractors and hauling carts. Sales of farm power equipment and of drainage and irrigation machinery were 52.7 percent greater than during the same period in 1985. Sales figures for agricultural and sideline products processing machinery were 4.6 percent greater than during the same period in 1985. Sales of semi-mechanized farm implements increased 12.5 percent over the same period in 1985. Sales figures for repairs and spare parts totaled 11,829,300 yuan, up 4.4 percent from the same period in 1985.

The thriving scene in Jiangxi's farm machinery markets this year results from consecutive year bumper harvests in agriculture throughout the province and the increase in peasant income, which have increased purchasing power. With readjustment in the rural industrial structure throughout the province, peasants need different kinds of agricultural machinery. This has stimulated a general rise in the volume of sales of farming, forestry, animal husbandry, sideline occupation and fishing industry machinery. The provincial Agricultural Bank liberalized agricultural loans in advance of spring farming. The total figure for farm loans arranged for throughout the province for the first half of the year shows a 23.5 percent increase over the same period in 1985. This has given impetus to sales of farm machinery. In Ji'an Prefecture, for example, once the peasants had loan funds, they hurried to the farm machinery company to buy tractors. During the first quarter, the Ji'an Prefecture Farm Machinery Company sold 117 Shanghai Model 50 tractors, six times again the number sold during the same period in 1985. This year farm machinery markets are rather fully stocked, setting the stage for increased sales. For example, last year it was impossible to order a Shanghai Model 50 tractor, but this year the factory can supply one at any time. Supplies of Dongfeng Model 12 hand tractors and Gan Jiang Model 12 carts, which are made in the province, are also fairly ample. This year, the Provincial Machinery Department issued a 3 million yuan command style spare parts production plan to the provincial machinery company and made arrangements for county farm machinery plant production, thereby increasing availability of spare parts.

9432
CSO:4007/453

CIRCULAR DETAILS GRAIN, OIL PURCHASE PLAN

HK100417 Xian Shaanxi Provincial Service in Mandarin 2330 GMT 8 Sep 86

[Text] The provincial government recently issued a circular on assigning grain and oil contract purchase plans for 1987.

The circular points out that the grain and oil contract purchase plans for 1987 should be set in accordance with the principle of making little readjustment while remaining unchanged on the whole. The plans should be made known to each peasant household so that the peasants can properly arrange production. Governments at county and township levels are not allowed to increase the targets set in the plans.

The provincial government also decided on rapeseed contract purchase beginning next year. Like grain contract purchase plans, rapeseed contract purchase plans are a task of economic contract and a state task. To encourage peasants to sell more oil crops, from next year, the province will give subsidies to peasants according to the amount of rapeseed they sell.

The circular demands that governments at all levels strengthen leadership over grain and oil work. Grain and oil contract purchase plans for 1987 must be made known to all peasant households before the purchase of this year's autumn grain and oil crops.

/9599
CSO: 4007/2

AREA COVERED WITH PLASTIC FILM INCREASES

Taiyuan SHANXI NONGMIN in Chinese 19 Jun 86 p 2

[Article by Hou Ligong [0186 4539 0501] and Zhao Anze [6392 1344 3419]: "Boundless Prospects for Film Ground Cover"]

[Text] Film ground cover technologies have been tested for 2 years, demonstrated for 2 years, and applied over a large area for 3 years since Shanxi Province imported them in 1979 and they are expanding at an extremely rapid rate.

The area covered was 1.31 million mu in 1985 and may reach about 1.7 million mu in 1986. More than 20 different crops are being grown under cover. Shanxi has done much better than other provinces or municipalities in speed, results, and scale.

Even more pleasing is the fact that several good situations have arisen in film ground cover cultivation techniques in Shanxi during 1986 which is manifested in the following areas:

1. It has expanded from cotton, vegetables, melons, and other crops to grain crops. Shanxi has covered more than 400,000 mu of corn, sorghum, wheat, and paddy rice in 1986, which is 24 percent of the total area covered.

2. Development has moved from single-use film to multipurpose film to make full use of the role of ground film and improve results. The peasants of Shanxi have applied traditional cotton-melon and cotton-vegetable intercropping techniques to plastic film ground cover to create a three-dimensional agricultural structure that uses film for many purposes under a covered environment according to the biological characteristics of crops. Examples include covering wheat first and cotton afterward, and so on. Economic results are 30 to 50 percent better than single covering and sometimes are more than double.

3. The regionality of covering has developed from south to north. The first area in Shanxi to use plastic film ground cover would be Yuncheng Prefecture, but now it has spread to such areas as Guangling, Tianzhen and even Yanggao Counties in Yanbei Prefecture. More than 300,000 mu is being covered in all of Yanbei Prefecture in 1986, which is a four-fold increase over 1986.

4. Covered cultivation techniques gradually are developing toward systematization and standardization. The focus for many of the covered crops in Shanxi has been placed on selection of superior varieties with rational proportions of nitrogen, phosphorous and potassium. In addition, adjustments have been made in planting times and density. This has changed the old ideology of the "ground cover panacea" that "required only one covering with film to increase production," and the comprehensiveness of new techniques is being examined.

5. The number of types of ground film has continued to grow. Besides common ground film, some areas are using colored film, striped colored film, super-light film, and disease- and pest-prevention film, which has lowered overall investments in weeding, pest elimination, and disease prevention and raised overall results in agricultural production.

12539/9835
CSO: 4007/460

PRICES FOR SUNFLOWER SEED READJUSTED

Taiyuan SHANXI NONGMIN in Chinese 12 Jun 86 p 3

[Article: "Shanxi Province Readjusts Sunflower Seed Prices, Purchases Will Be Made at an 'Inverse 4:6' Ratio"]

[Text] To encourage development of sunflower seed production and guarantee normal supplies of edible oils for urban and rural people, Shanxi Province will begin purchasing sunflower seeds at an "inverse 4:6" ratio on 1 April 1986. The actual stipulations are: (1) The past method of making no distinction between seeds used for oil and those used for food and paying the same price for each will be changed to different prices for sunflower seeds used for oils and those used as food. It also was decided that middle-level prices for 50 kg of sunflower seeds for oil (small Mo [black] sunflowers and northern sunflowers) would be 32 yuan. The "inverse 4:6" ratio price would be 41.60 yuan. The purchase price per kilogram of sunflower seeds used for food (Sandaomei [three-ridge] sunflower seeds) will be 28.50 yuan and the "inverse 4:6" ratio price will be 37.10 yuan. The price for sunflower seeds used for oil and for food as well as hybrid cross sunflower seeds can be determined flexibly by local areas according to the principle of higher prices for higher quality and lower prices for lower quality. (2) There will be no change in the original unified purchasing price of sunflower seeds for the time being, and purchases still will be made at a unified price for all of Shanxi, which is 120 yuan per 50 kg of middle-grade seeds. The "inverse 4:6" ratio price for middle-grade seeds will be 156 yuan per 50 kg. (3) Price differentials by grade: the unified purchase price will remain at 3 percent more for higher grade seeds and 3 percent less for lower grade seeds. The "inverse 4:6" ratio prices will be calculated on the basis of the unified purchase prices for each grade.

12539/9835
CSO: 4007/460

LIVESTOCK SITUATION EXCELLENT IN FIRST QUARTER OF 1986

Taiyuan SHANXI NONGMIN in Chinese 10 Jun 86 p 3

[Article: "The Livestock Production Situation Was Excellent During the First Quarter of 1986, Large Livestock Develops Stably, Slaughter Rates Satisfy Supplies; Meat, Egg, and Milk Output Grows Substantially, Chickens, Rabbits and Bees Decline Slightly, Sheep Are Down a Great Deal"]

[Text] According to the Shanxi Provincial Agriculture and Animal Husbandry Office, good momentum appeared in animal husbandry production in Shanxi during the first quarter of 1986. The statistics are:

Large livestock: Shanxi had 2,598,500 on hand at the end of March 1986 and this level has been maintained since the beginning of the year. The slaughter rate for cattle was 25,900 head, up 16 percent over the same period in 1985. There were 836,400 fertile cows, up almost 10 percent over the same period in 1985. Obvious changes have occurred in the peasants' concept of value over the past few years and they have shifted from simply raising draft animals to a focus on developing commodity livestock. Quality as well as quantity has improved and the proportion of cows has increased. There is excellent momentum in the development of large livestock, especially cattle.

Pork: Pig inventories in Shanxi were 11 percent higher than over the same period in 1985. Fertile sows increased 15 percent and live pig births increased 22 percent. The slaughter rate for all of 1986 may surpass 2.7 million head, which basically can meet market demand. It has been forecast that purchases of pigs during the second and third quarters of 1986 in Shanxi will exceed sales, with demand in excess of 200,000 head, including 120,000 during the second quarter and 80,000 during the third quarter.

Meat, milk, and eggs: These were up by 55, 15 and 87 percent, respectively, over the same period in 1985.

Poultry: Chicken inventories were 32,156,700 at the end of March 1986, down 7.63 percent over the beginning of the year. Inadequate feed supplies in combination with rising prices mean that the peasants profit little from raising chickens, so there is a downward trend in chicken raising. There also were declines to different degrees in rabbits and bees compared with the same period in 1985.

Sheep: Shanxi had sheep inventories of 4,228,200 head, down 16 percent from the first quarter of 1985. This is a serious problem and should be attended to by the relevant parties. Cadres and peasants throughout Shanxi have indicated that the decline in sheep numbers can be controlled during 1986 if we earnestly implement the spirit of CPC Central Committee Document No 1 and Shanxi Provincial CPC Committee Document No 5 (1985) and work conscientiously for reforms, deregulation, invigoration, and stronger leadership and adopt effective measures in all areas.

12539/9835
CSO: 4007/460

PROVINCE PORK PRODUCTION UP AGAIN

Chengdu SICHUAN RIBAO in Chinese 15 May 86 p 1

[Article by Wang Naizhen [3769 0035 4176]: "Sichuan Province Pork Production Again Does Well; 11 Million Pigs Sent to Market This Season, Pig Population Highest Ever for This Time of Year"]

[Text] Sichuan Province pork production continues to advance in 1986 after its record-shattering achievements of 1985. According to Sichuan Provincial Livestock Bureau statistics this season 71,829,000 pigs were sent to market, the first time Sichuan pig production has pased the 11 million mark. This increase of 20.5 percent, or 2.01 million more pigs than during the same period of 1985, is a record for the number of pigs for this time of year. According to statistics, pigs were worth 200 million yuan more than during the same period of 1985.

Pork production is one of the great strengths of Sichuan Province. Pork production in Sichuan Province since 1977 has benefited from the wide popularization of scientific pork production techniques and the spread of low-fat commercial pork production from a few county base areas to the rest of the province. The proportion of pigs sent to market has increased from 46.5 percent in 1977 to 79.8 percent last year. The profitability of pork production has increased steadily. Pork production has become a more important source of income for the peasantry. The enthusiasm of the peasantry for pork production continues to grow. At the end of this season the number of pigs remaining in the pigpens of Sichuan Province reached 59,074,000, an increase of 5.1 percent and 2,849,000 over last year. The number of mature sows and piglets also increased over the same period last year. In order to maintain the enthusiasm of the peasantry the provincial party committee and the provincial government adopted these five policies and measures: "Take the initiative in purchasing, when buying a fat pig hold to the price guideline, pay no less than the floor price, pay more for better quality, practice different forms of management, don't allow unjustly lowering grades and lowering prices, and collect taxes and fees fairly." These policies ensure that pork production will continue to grow steadily.

12369/12948
CSO: 4007/438

ARTIFICIAL BREEDING OF FISH ON RISE

Kunming YUNNAN RIBAO in Chinese 13 May 86 p 2

[Article by Han Ying [7281 5391]: "Tremendous Increase in Output From Province's Artificial Fish Breeding in 1985. Beginning of a Change in 'No Fish In the Diet' in Some Cities and Towns"]

[Text] Simao City and Kaiyuan County, which are by no means lands of fish and rice in Yunnan Province, frequently had fresh fish for sale all year round in 1985. In Xishuangbanna Dai Autonomous Prefecture, where non-staple foods are fairly scarce, a situation came about, nevertheless, in which there was a glut of fish periodically. Such fine situations are attributable to a fairly sizeable growth during 1985 in the province's fishing industry, and are particularly the result of a tremendous increase in the artificial breeding of fish.

In the development of its fishing industry, all jurisdictions in the province put into effect the province's policy of "taking breeding as the key link to bring about a rise in the state-owned, collective and individual breeding of fish, and taking support to specialized households and major households as a key link." This changed, to a fairly large extent, the practice of leaving to nature the development of fish and the backward situation of catches depending on heaven's will. Gradually a change was made to the artificial breeding of commodity fish and the appearance of a heartening situation of large scale development of artificial breeding of fish. In 1985, the gross output of fish for the province as a whole was 26,476 tons in a 22.7 percent increase over 1984. This included a 12,097 ton rise in the output of fish from lakes, reservoirs, dams and paddyfields, which amounted to 45.7 percent of gross output and a 29.13 percent increase over 1984.

Specialized households and major households were driving forces in development of artificial breeding of fish. Spurred on by them, more than 87,700 fish rearing households came into being throughout the province, 60,800 more households than in 1984. Water surfaces used for the rearing of fish covered 180,000 mu or 92,000 mu more than the 88,000 mu of 1984. Fish output was 3,366 tons, quadruple [sic] the 1984 output of 1,068 tons. The area in which ponds were dug for the rearing of fish alone amounted to 30,000 mu, a 1.2 fold increase over 1984.

Following the mass "craze for rearing fish," in some places a fine situation of change from non-intensive stocking and rearing of fish changed to high yield intensive rearing. In the rearing of fish in warm running water and in net cages, for example, results were very marked. During 1985, more than 300 mu were used for the rearing of fish in warm running water for a output of 427 tons of fresh fish, or an average yield of 1,366 kilograms per mu. In Kunming, fish were reared in net cages on 135 mu for yields averaging 2,219 kilograms per mu.

9432
CSO: 4007/453

BRIEFS

TEA EXPORTS--As of the end of August, the Yunnan Provincial Tea Export and Import Corporation earned $15,290,000 U.S. from tea and coffee exports, fulfilling 102.1 percent of the annual plan, and an increase of 83.88 percent over the same period last year. [Excerpt] [Kunming YUNNAN RIBAO in Chinese 12 Sep 86 p 1]

CSO: 4007/18

BRIEFS

SALT OUTPUT--As of the end of August, Zhejiang had produced 462,000 tons of crude salt, fulfilling the annual plan more than 4 months ahead of schedule, and by more than 10 percent. [Excerpt] [Hangzhou ZHEJIANG RIBAO in Chinese 15 Sep 86 p 2]

CSO: 4007/18

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JPRS-CAG-86-037

27 OCTOBER 1986

China Report

AGRICULTURE

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JPRS-CAG-86-037
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/9986

NATIONAL LIVESTOCK BREEDING CONFERENCE HELD

OW201256 Beijing XINHUA in English 1157 GMT 20 Sep 86

[Text] Harbin, 20 September (XINHUA)--A number of China's livestock experts want the country's farmers to use their cattle and water buffalo to expand into the dairy and beef business.

Participants at the National Livestock Breeding Conference, which ended in Qiqihar, Heilongjiang province, today, said the farmers could expand their operations by milking and slaughtering their draught animals.

The best way to achieve this goal, say the experts, would be to improve the breed of livestock so that cattle and water buffalo which are traditionally used as beasts of burden produce more milk and better quality cuts of meat.

Breeding techniques have helped increase the milk produced from buffalo. In Guangxi Zhuang Autonomous Region a new breed of buffalo produces an average of 2,400 letres of milk, which is three times the average of a conventionally bred water buffalo.

The experts believe the farmers could earn more money while meeting increased consumers' demands for more meat.

"Meanwhile," said one livestock expert, "we should help spread the use of artificial insemination, frozen embryo transfers and set up a comprehensive service network for breeding, milk collection and disease prevention.

Statistics released at the conference show that China now has 57.98 million head of cattle and 19 million head of buffalo, making each among the largest herds in the world.

The conference was called by the Ministry of Agriculture, Animal Husbandry and Fisheries.

Dairy cattle comprise 58 percent of all bovines in northeast China's Heilongjiang province, one of the country's largest milk producing provinces.

/12913
CSO: 4020/9

PORK OUTPUT, SALES FOR 1986 DISCUSSED

Beijing NONGMIN RIBAO in Chinese 8 Jul 86 p 2

[Article: "Trends in China's Pork Output and Sales in 1986--Sufficient Resources and Declining Sales During the First Half of the Year, More Shortages and Slightly Higher Prices in the Last Half of the Year"]

[Text] It was learned from the National Pork Processing and Storage Conference convened by the Ministry of Commerce Food Bureau that forecast pig inventories in China in 1986 will be 343.3 million and slaughter figures will be 246.13 million, up 3.2 and 3 percent, respectively, over 1985. Imbalances have appeared, however, in yearly pig slaughtering, purchasing, storage, and sales. They are manifested in more slaughtering during the first half of the year, brimming resources, large commercial reserves, and a major decline in purchasing, which has led to widespread plunges in purchasing and selling process After the first part of August, pig resources will be slightly less than during the first half of 1986, market demand will rise, there will be supply shortages and prices will move upward stably.

Pigs in all areas have developed quickly since deregulation of the pig market in April 1985. According to a survey of 16 provinces and municipalities including Jiangsu, Henan, and Jilin, the number of pigs slaughtered was up by more than 5 percent over the same period in 1985. The abundant resources in slaughtered pigs and decline in market sales meant that with the exception of declines in pork reserves in Jiangxi, Guangxi, Ningxia, Fujian, and Quizhou, there was an increase in all other provinces and supplies are extremely abundant in some. According to a survey of eight production regions in Jiangsu, Henan, Hubei, and Hunan provinces, there will be a need to ship out a total of 2.62 billion tons of pork during the second quarter, but the six primary regions where the pork is sold were able to accept only 443 million tons, so supplies were 2,177,000,000 tons greater than demand. Besides the ability of commercial storage to accept 1.05 billion tons, there will be no outlet for 1,127,000,000 tons. The saturation point already has been reached in Beijing, Tianjin and Shanghai and even the Nanjing sales region had to ship out 8,000 tons. Difficulties in selling pork have begun to appear in parts of Henan, Hebei, and Jiangsu.

There has been a widespread drop in buying and selling prices, which generally are down 5 to 8 percent from the end of 1985. The average buying price for pigs in Henan Province was 69.80 yuan per 50 kg, down by 15.7 percent from 1985. The average for China as a whole is 70 to 72 yuan per 50 kg. The figure is 135 yuan in Guangdong. Selling prices for pork in Yunnan have floated downward for 4 consecutive months and the average selling price is 2.10 yuan per jin, down 7.77 percent from the end of 1985. Unskinned, bony pork is selling for 2.34 yuan per jin in Xian City, down 0.50 yuan since October 1985. There has been a substantial decline in pig inventories. Feed prices have risen. The price of corn was 0.20 yuan per jin in 1985 and now has risen to 0.36 to 0.44 yuan, up 80 to 120 percent. There has been a net increase of 15 to 20 yuan in the amount of pure feed needed to raise one pig, which has increased the cost of raising pigs. Added to the affects of difficulties in selling pigs, the result will be that raising pigs will be hard. We propose that the relevant departments continue to deregulate purchasing prices for pigs and that they strengthen leadership and management and give consideration to factors in all areas to formulate rational seasonal price differentials, minimum protected prices and allocation and transfer prices to promote stable development of pig production.

12539/12948
CSO: 4007/470

RENMIN RIBAO ON GRAIN PURCHASES, MARKETING SYSTEM

HK251348 Beijing RENMIN RIBAO in Chinese 20 Sep 86 p 2

[Report by Gao Xiaomeng [7559 1420 5536], Gao Shan [7559 1472] and He Jianzheng [0149 0502 2973]: "Giving the New Mechanism More Room to Expand--Investigation of and Thoughts on Reform of the Grain Purchase and Marketing System in Hunan, Guangdong and Jiangxi Provinces"]

[Text] The decision by the Party Central Committee and the State Council on a switchover from the planned state purchase of grain to contracting for purchases in 1985 raised the curtain on the overall reform of the grain purchase and marketing system. Experience in the past 1 year and more shows that positive results have been achieved in the initial battle. But given the complicated and strict traditional system formed in the past 30-plus years, some obstacles have been encountered in actual progress.

In the three provinces of Hunan, Guangdong and Jiangxi, we noted that the reform in many areas had not been properly introduced. Some measures had actually slipped back to the old path. Where lay the main obstacles? Where should a breakthrough be made in deepening the reform? We, together with the comrades at the provincial, prefectural and county levels, jointly studied this problem.

The Contradiction Involving Rigid Marketing and Flexible Purchasing

The practice of rigid marketing and flexible purchasing is feared to be one of the main contradictions standing in the way of deepening the reform of the purchase and marketing system. First, planned state procurement had a restraining effect on contracting for purchases. Figures make drab reading, but the citation of some cannot be avoided. As far as the whole country is concerned, of the total volume of grain sold at officially fixed prices in 1985, the proportion obtained by relying on state contracts for purchases was 88 percent. The balance was made up for by what was in stock. In 1986, of the national planned volume of sales at officially fixed prices, the proportion accounted for by state contracted purchases dropped to 77 percent, and the balance was made good by authorized purchases by given area at the request of the Ministry of Commerce at prices higher than those stipulated for in contracts. What was the situation like when this filtered down the relevant areas?

Hunan's planned volume of grain sales at officially fixed prices was 3.185 billion kg, and the amount to be transferred to other areas was 500 million kg. This made a total of 3.685 billion kg. The province handed down contracts for the purchase of 2.8 billion kg and authorized the purchase on its behalf of 1.85 billion kg. This made a total of 3.885 billion kg. Given an estimated output of 25.5 billion kg realized, the volume that could be supplied as commodities was about 6 billion kg (which meant a quantity of 4 billion kg of grain good for trading). State contracted and authorized purchases accounted for 97.1 percent of the source of commodity grain. Again take a look at Jiangxi. The planned volume of grain sales at officially fixed prices was 2.5 billion kg, and the amount to be transferred to other areas was 1 billion kg. This made a total of 3.5 billion kg. The province handed down contracts for the purchase of 2.45 billion kg and authorized the purchase on its behalf of 1.5 billion kg. This made a total of 3.5 billion kg. Given an estimated output of 15.5 billion kg realized, the volume that could be supplied as commodities was about 5.5 billion kg (which meant a quantity of 3.85 billion kg good for trading). State contracted and authorized purchases accounted for 90.9 percent of the source of commodity grain. It is quite obvious that due to the too large volume of planned purchases to be pledged, the grain market has been choked by state purchases, with too little room left for maneuver.

Second, contracted purchases have a restraining effect on negotiated purchases. Negotiated purchases are legitimate. But to ensure the fulfillment of the targets for contracted purchases, the governments of some grain-producing areas have actually adopted some very strict market insulation measures, preventing the outflow of grain. In Hunan and Jiangxi, the provincial governments have the following stipulations: With the county as the unit, prior to the fulfillment of purchase assignments, no unit or individual is allowed to purchase and trade grain at negotiated prices. After the fulfillment of given assignments, the organization of grain purchases at negotiated prices for export to areas outside of the province must also be approved by the provincial food department in charge, and selling prices are to fixed above the lowest price limit set by the provincial government. Thus, after the start of the new grain year (1 April), the "closed door" can generally be "thrown open" only in January the next year. There is only a period of 2 months in which basic-level enterprises can trade grain at negotiated prices. As a result, contracted purchases suppress negotiated purchases, with the two fields choked to death.

The Reform of the Marketing Link is the Focus of Future Efforts

To trace things to their origins, we cannot help turning back to ponder again the problem on the reform of the grain marketing system. Can we think the following? The volume of our country's grain sales at officially fixed prices determines the ratio of negotiated purchases to negotiated sales, and the large or small scale of negotiated purchases and negotiated sales also determines the narrow or wide scope for the growth of the new mechanism. With the pacesetting break-through in the purchase link, the reform of the marketing link has become the focus of the reform.

In fact, in the traditional system, planned purchases were made for the sake of planned marketing. The two are inseparable. Now given the maintenance of planned marketing and the liberalization of planned purchases, financial subsidies are relied upon to resist fluctuations in the prices of supplies. The result is that no matter how powerful the state is financially, the link involving the growth of the market mechanism cannot possibly operate in a very normal manner. With the very "rigid" planned marketing as a starting point, given a tangle of complicated chains placed between rigid marketing and liberalized purchases, there will eventually form a set of "dominoes," with marketing suppressing purchasing.

It can be said that the fundamental cause of the phenomenon of rural contracted purchases being unstable and negotiated purchases being incapable of being easily made active is not purchasing itself but the link to marketing. The volume of our country's sales of grain at officially fixed prices accounts for too big a proportion and shows too little flexibility. This is the main problem of the current grain purchase and marekting system. Be it clinging to stability with contracted purchases or liberalized trading at negotiated prices, the key lies in reducing the volume of state planned sales (hereinafter briefly called sales).

Of course, reducing sales is a matter calling for the exercise of the greatest prudence. It has a bearing not only on producers but on consumers and all society. Bungling this matter is likely to give rise to turmoil. But at present, we can feel our way across the river and play it safe exploring things and working on the job.

It is Difficult to Reduce Sales in a Unified Manner But Easy to Reduce Sales at Different Levels

We separately studied this problem in three provinces. The general view was that it was difficult to reduce sales. The difficulty lay in formulating a national unified program for sales reduction. In an analysis of the conditions of the three provinces, we have found that there are the following several features of the society's readiness to accept a reduction in the sale of grain: first, consumers' purchasing patterns are more ready to accept this than they themselves are psychologically; second, the readiness to accept the reduction in the sale of fixed-price grain varies with different categories of crops and with different areas. Therefore it is very difficult to move in step. For example, with the introduction of the policy calling for rural grain ration purchases and sales at the same prices in 1985, conditions varied with various provinces in implementation. Something was left undone by most of the provinces. The programs left not implemented were also quite different. On our way, we solicited the views and ideas of various areas about the reduction of sales. As a result, the steps listed by various areas in the order of importance to reduce sales also varied greatly. Facts have shown that given a unified central program and unified steps in reducing sales, the risk is likely to be greater and the difficulty is also greater. There is also liable to be friction.

On the contrary, it is easier and safer to let various provinces reduce sales separately. In this respect, Guangdong has provided us with some experience.

Guangdong's approach called for the introduction of contracts for grain financial subsidies at prefectural and city levels. In 1985, the Guangdong Department of Finance credited various prefectures and cities with 257 million yuan in subsidies for price differences and 279 million yuan in subsidies for losses in relevant trading, allowing no subsidy for excess losses and the retention of all the amount resulting from a reduction in estimated losses. Due to inadequate subsidies for committed sales, various areas were quick to reduce programs for sales at officially fixed prices and the relevant quantities, in order not to incur extra financial outlays in their budgets. Such a practice involving finance as a driving force, the reduction of sales at different levels and the sharing of risks not only lightened the difficulty of reducing sales in a unified manner but also made for a smooth survival of a period in which the supply of grain was considered to be tight.

The expansion of the regulating role of the market in grain production has become an objective need in economic development and an inevitable trend. To allow the smooth progress of this reform and its being further deepened, we must do some easing in the matter of marketing. Only in this way can we properly lower the figures for contracted purchases and thus give the new mechanism more room for growth.

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CSO: 4007/19

NEW RURAL REFORM MEASURES BENEFIT CITIES

OW291303 Beijing XINHUA in English 1248 GMT 29 Sep 86

[Text] Beijing, 29 Sep (XINHUA)--Chinese cities now have ample supply of farm products and peasants are able to gear production to market demand as a result of new rural reform measures started last year.

The Chinese government began lifting the mandatory production and purchase quotas for most farm products in 1985, making it possible for peasants to have decision-making power over production and marketing.

An official of the state council rural policy research center cited Beijing as a typical beneficiary of the new reform measures.

Like other cities, fresh vegetables are available in Beijing the year round. "This was something out of the question before 1985," a woman in her 50s said.

The Beijing municipal authorities had to subsidize an annual supply of 100,000 tons of watermelons before 1985 at three million yuan (about 900,000 U.S. dollars).

But this summer Beijing residents consumed 350,000 tons of melons, while the municipal authorities did not subsidize sales at all, according to the official.

He said that peasants throughout the country are voluntarily organizing new associations as a way to market their products more efficiently.

These associations practice "democratic management" and undertake simultaneously production, supply and sales. Their profits are divided according to the amount of goods provided by each member.

For example, the duck-breeding association in Xiaogan county, Hubei province, has 200 meters. According to work division, some are responsible for hatching and breeding ducks, others for buying fodder and still others for sales.

Hubei province now has 1,000 peasant-organized associations, their business including bee keeping, edible fungus breeding and citrus cultivation.

Peasants can sell their products at 5,000 free markets across the country, the official said.

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CSO: 4020/10

FARM WORKERS FIND EMPLOYMENT IN URBAN LABOR SERVICES

OW290320 Beijing XINHUA in English 0301 GMT 29 Sep 86

[Text] Beijing, 29 Sep (XINHUA)--Workers no longer needed on the country's farms have become an important element in China's economic development, an official in the Ministry of Agriculture said today.

Working in construction, transportation and mining, and as salespeople, tailors and housekeepers, the workers largely come from areas in eastern China that are comparatively economically developed.

In these areas, agricultural reform linking income to output since 1979 "has increased productivity so much that between one-third and one-half of the old farm labor force is no longer needed in the fields," the official said.

Most have gone to work in local factories and service trades or have become itinerant workers who have found better opportunities in the country's developing western areas, he said.

While many of the workers hire themselves out individually, more than eight million former farmers work for construction service firms organized by local governments. According to the official, about half of the work the firms do is in urban areas.

"Especially where the local governments have gotten involved, we've found that labor services enhance ties between the cities and the countryside," he said. "They certainly provide workers where they are needed."

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CSO: 4020/10

AID TO UNDERDEVELOPED RURAL AREAS TO INCREASE

OW290821 Beijing XINHUA in English 0705 GMT 29 Sep 86

[Text] Yinchuan, 29 Sep (XINHUA)--Government aid to underdeveloped rural areas will increase and redirected, with individual subsidies being replaced by investment in projects such as land fertility, transportation and education.

Before, authorities gave aid in the form of grain, daily necessities, some farm tools and chemical fertilizers. Such aid was ineffective and sometimes abused by individual farmers, economic officials from the central government told XINHUA today.

Under the new plan, financial subsidies and goods will be offered mainly to areas seriously hit by natural disasters, said the official.

The underdeveloped areas are mostly in remote mountains near borders and inhabited by ethnic minorities struggling to deal with the rough environment and the low industrial infrastructure.

According to a government survey, 200 counties, one-tenth of the nation's total, are poor areas where individual annual income is below 200 yuan.

At a recent seminar discussing the problems in the country's poor areas, scientists agreed the most urgent task is to improve conditions on barren land.

The government also helps farmers by offering sound advice, which has proven successful.

An example is a village on the loess plateau in Ningxia. Since 1983, the village began to enlarge the land for planting trees and raising domestic animals. In three years, the village's grain output tripled, the earnings from animal husbandry increased by 17 times and the annual per [capita] peasant income was raised from 47 yuan in 1983 to 355 yuan.

The head of the village said that the trees and grass have checked soil from being eroded and domestic animals have given a much higher income than crops and by raising animals it also helped improve the fertility of the soil.

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CSO: 4020/10

NATIONAL

BRIEFS

CROP ESTIMATING TECHNOLOGY--Beijing, 17 Sep (XINHUA)--The application of remote sensing technology in estimating winter wheat output passed testing in Beijing today. This new technology, which is 95 percent accurate, is more economical and faster than traditional crop estimating methods. The remote sensing technology has been applied in China's major winter wheat regions in 11 provinces and municipalities this year, according to a State Economic Commission official. [Summary] [Beijing XINHUA Domestic Service in Chinese 1316 GMT 17 Sep 86 OW] /7358

AGRICULTURAL MACHINERY EXPORTS SUBSIDIZED--Beijing, 17 September (XINHUA)--The state will subsidize the development of up to five centers producing agricultural machinery for export, the PEOPLE'S DAILY reported today. The paper said the centers will open by 1990 and would concentrate on improving the quality of current products and on developing new exports. China sells agricultural machinery to 99 countries and regions in Western Europe, North America and Southeast Asia. Leading products include small diesel engines, light and medium-sized tractors and internal-combustion electric generators. [Text] [Beijing XINHUA in English 1109 GMT 17 Sep 86 OW] /12913

CSO: 4020/9

FUNDS ALLOCATED TO PURCHASE FARM MACHINES

Beijing NONGJIHUA BAO in Chinese 23 Apr 86 p 1

[Article: "Increase Investments in Agriculture, Strengthen Construction of Basic Faciliites in Agriculture--Some Provinces and Municipalities Are Providing Credit Assistance for Farm Machinery Purchases"]

[Text] To lay a good foundation for agricultural development during the first year of the Seventh 5-Year Plan and increase investments in agriculture, many provinces and municipalities have adhered to the spirit of CPC Central Committee Document No 1 regarding "no relaxation in grain production" and have adopted a series of measures to support agriculture that include credit assistant for purchases of farm machinery and equipment and development of agricultural mechanization. The situation varies quite a bit, however.

Heilongjiang Province Has Allocated Special Loans for Farm Machinery Maintenance

Information provided by relevant departments in Heilongjiang Province indicates that the province worked actively to raise capital to assure progress in inspection and repair of farm machinery and tools for spring cultivating. Statistics from 13 cities and counties indicates that besides the capital raised themselves, they need 4,709,000,000 yuan in loans and 4,805,000,000 yuan already has been loaned. To ensure that the special loans are used for their intended purposes and not diverted to other uses, loan indices will be distributed to farm machinery stations for unified parts purchasing and unified repairs.

Shaanxi Province Has Allocated Loans for Machinery Purchases to Peasants in Poor Areas

According to information from the Shaanxi Provincial Bank's farm machinery information network, the province has decided to support increased prosperity among poor rural households and the Shaanxi Provincial Agricultural Bank and has allocated 24 million yuan in credit funds to deal with the capital shortage among peasants in poor areas when buying farm machinery.

The Focus of Farm Machinery Loan Allocations in Hebei Province Is "Mountain, Coast and Dam" Regions

According to information disclosed by the Hebei Provincial Agricultural Bank's credit office, the province allocated more than 22 million yuan in agricultural loans during the first three quarters of 1985 and it has continued to develop farm machinery credit allocation work, especially in a slight increase in total loans to poor and "mountain, coast, and dam" regions. The Hebei Province Agricultural Bank has called on farm machinery supply departments at all levels to move for closer coordination and permit the credit to play a more positive role.

Anhui Province Has Clarified the Scope of Agricultural Loan Allocations

Information supplied by the Anhui Province Farm Machinery Marketing Research Society indicates that the focus of farm loans in the Anhui Provincial Agricultural Bank during 1986 will be placed on the following areas: substantial support for specialized households, contractual responsibility households, state farm summer crops, tea and other farmland management, and spring cultivation and production. Poor areas and regions that suffered disasters during 1985 as well as some poor households have been given preference in capital arrangements, and they also have been given special support. This has provided firm guarantees of multiyear capital needs for farm and sideline product purchases and normal deliveries of the means of production used in agriculture. Small-scale hydropower and other rural energy construction also received support and households that use methane were also assisted.

Fujian Province Has Preferential Loans for Purchases of Farmland Machinery

It was learned from the Fujian Provincial Agricultural Bank that planned total loans from rural credit cooperatives in 1986 will be 1.65 billion yuan, up about 250 million yuan over actual loans made in 1985. The plan for the first half of 1986 is 1 billion yuan that will be targeted at grain production and agricultural production with special consideration being given to 11 poor counties and 153 poor townships in Fujian. In general, loans will not be allocated for purchases of large tractors or trucks. Peasants must provide 50 percent, or at least 20 to 30 percent, of the total capital themselves for tractors of less than 12 HP. The amount of the loans is limited to 10,000 yuan or less with suitable expansion for associations. The interest rate is determined on the basis of the term and amount of the loan as well as its purpose. The rate is 0.6 to 0.8 percent monthly for farmland projects and 1.0 percent monthly for transportation activities, with special consideration for poor areas.

Guangdong Province's Peasants Do Not Have Enough Capital To Buy Large and Medium-Scale Farm Machinery

Farm machinery departments in Guangdong Province have indicated that most agricultural credit during 1986 will be used for developing forestry, mining, crop growing, and breeding and other aspects of production. Moreover, loans to peasants for purchases of farm machinery require that they provide more than 50 percent of the required capital themselves, so there is insufficient capital for peasants who wish to purchase large and medium-sized farm machines and tools and purchases have declined.

12539/12947
CSO: 4007/463

PROVINCIAL FARM MACHINE OUTPUT, SALES REPORTED

Beijing NONGJIHUA BAO in Chinese 23 Apr 86 p 3

[Article: "Farm Machinery Production and Sales in Some Provinces During the First Quarter of 1986"]

[Text] Guangdong Province

A sluggish farm machinery market appeared during the last half of 1985 in Guangdong Province, but a new trend of a slow rise appeared in early 1986. According to statistics, net sales in Guangdong during the first quarter of 1986 were 124 million yuan, which was a 3.2-percent decline over the first quarter of 1985 but an increase of 6.6 percent over the fourth quarter of 1985 and 47.12 percent over the yearly average during the Sixth 5-Year Plan, and it was the second highest level in history for the first quarter of a year.

1. Markets are stable and are rising monthly. Net sales during March 1986 amounted to 48,577,000 yuan, equal to 39.2 percent of the entire quarter and up 7.8 percent and 60.8 percent over January and February 1986, respectively, and they were up 15.2 percent over March 1985, which was the highest level in history.

2. Supplies of small farm machines cannot meet demand. More than 8,500 tractors were sold during the first quarter, up 17.3 percent over the first quarter averages for the years 1981 to 1985. Especially noteworthy were the 4,217 sold in March 1986, which is much higher than previous levels. The energy shortage has meant that factories cannot deliver on time and machine oil shortages have made it impossible for some to ship out their products, so many peasants have been forced to go directly to the factories. According to incomplete statistics, latent demand for tractors exceeds 2,000.

3. Demand for large and medium-sized tractors and farm power machinery is stable and a tendency toward increase has appeared.

4. Sales of maintenance parts have risen substantially. Net sales were up by more than 70 percent over the first quarter of 1985, but inventories stand at only 15 percent and 135 and 160 system diesel engines are in especially short supply.

Hubei Province

There was a substantial decline in farm machinery production and sales during the first quarter of 1986. The value of output completed in the farm machinery industry was 92.88 million yuan, a decline of 22.7 percent from the first quarter of 1985. This included 20.71 million yuan in maintenance parts, up 9.91 percent over the first quarter of 1985. Sales outside of farm machinery company systems totaled 83.49 million yuan, up 24 percent from the first quarter of 1985.

The sales situation for primary farm machinery commodities was: 921 large and medium-sized tractors, down 47 percent from the first quarter of 1985; 1,845 walking tractors, down 43 percent from the first quarter of 1985; 108 small four-wheeled tractors, down 83 percent from the same period in 1985; and 6,805 diesel engines, down 53 percent from the first quarter of 1985.

Analysis of surveys indicates that the main reasons for the substantial decline in output and sales are:

1. Shortages of raw materials and oil. The annual production plan for power vehicles, for example, was 520,000 which, when added with the production of power vehicle parts, would require about 6,000 tons of steel for the year. Only 1,300 tons were available during 1986, however, and most of that never reached the factories, so they are sitting and waiting for materials before they can produce. Besides shortages of raw materials, the Guangji, Yichang and other diesel engine plants also lack diesel test vehicles, which has seriously affected production of diesel engines.

2. Electric power shortages. According to information from the Yichang Diesel Engine Plant, the factory requires 700 kW of electricity for normal daily operation, but electricity actually is supplied only 3 days a week and only 400 kW or less can be guaranteed when there is power.

3. Capital shortages. One aspect is that capital shortages in enterprises that produce farm machinery and the increased cash loan and factory production plans implemented at the present time in enterprises producing farm machinery have made it impossible to recover loans for assigned sales of farm machinery products, with the result that some enterprises were unable to pay out wages during January and February of 1986 because of an inability to produce. A second aspect is the peasant capital problems concerning farm machinery purchases. Although peasant incomes have risen over the past 1 or 2 years, it still is difficult for them to purchase farm machinery with their own funds. Reductions in agricultural credit were followed by substantial declines in farm machinery purchases. Some users have indicated that farm machinery loans were loosened up a bit in late March and that there have been substantial increases in the volume of farm machinery sales. Sales outside of the Hubei Provincial Farm Machinery Co. system reached 38.83 million yuan in March, almost as much as the combined figure for January and February 1986.

The forecast is that output and sales will continue to grow on the March basis.

Shandong

The Shandong Province Machinery Department and Materials Bureau convened a joint Farm Machinery Product Order Meeting in Tai'an from 18 to 20 March 1986 at which orders worth 115,499,700 yuan were placed. Farm machinery orders in Shandong during 1986 have reached 167,204,500 yuan, up 21.1 percent over the 1985 value of output and 14 percent of the planned value of output in 1986. Many enterprises have received enough orders for all of 1986 and additional orders are not being taken for well-known and top-quality products. The order situation indicates that the 1986 farm machinery market is a rather good one.

The value of output in the farm machinery industry in Shandong Province during January and February 1986 was rather low, totaling less than 200 million yuan for both months. A substantial increase began in March and the total completed value of output in the farm machinery industry during the first quarter of 1986 was 321.67 million yuan, down 6.8 percent from the same period in 1985. The second quarter is a busy time for farm machinery sales, and there will be even greater recovery and growth in output and sales of large, medium, and small tractors, tractor-drawn farm machinery and tools, threshers, farm tractors, and transport vehicles, and other types of farm machinery.

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CSO: 4007/463

HUANG HE RIVER SILT USED TO ENRICH FARMLAND

OW290843 Beijing XINHUA in English 0823 GMT 29 Sep 86

[Text] Jinan, 29 Sep (XINHUA)--Silt from the lower reaches of China's Yellow River is now being used to enrich the farmland on the banks of the river and to make bricks.

More than 1.3 billion tons of river silt has been used for this purpose in the provinces of Shandong and Henan, a local official said.

The upper and middle reaches of the Yellow River, China's second-largest, run through the world's biggest loess plateau where water and soil erosion are serious. Every year the river carries with it to the lower reaches as much as 1.2 billion tons of soil and sand which silt up the river course in the lower reaches, making the river one of those with the highest silt content in the world.

China has made great efforts to utilize the silt in the lower reaches of the river while maintaining the water and soil conservation of the upper and middle reaches in recent years.

Sandy and salinized soil can be turned into fertile farmland by spreading a thin layer of the rich silt on it and the silt-covered fields are particularly suitable for planting wheat and soybeans, raising grain output by five times from 750 kg to 3,750 kg. In some areas, per-hectare output can be as high as 7,500 kg.

Moreover, a total of 280 million cubic meters of river silt has been used to widen dikes, saving 28 million workdays and 280 yuan (about 75.6 million U.S. dollars).

Five counties and cities along the river have made 2.6 billion bricks, worth 120 million yuan from silt dredged from the river bed.

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CSO: 4020/10

BRIEFS

BANANA OUTPUT--The estimated gross output of bananas in southern China is 15 million dan. Guangdong has increased output by 46 percent; Guangxi has increased output by 38 percent; Fujian and Yunnan have increased output 40 percent and 32 percent respectively. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 6 Sep 86 p 2]

CSO: 4007/26

ANHUI

OFFICIAL OUTLINES CHANGES IN TEA INDUSTRY

Hefei ANHUI RIBAO in Chinese 25 May 86 p 2

[Interview with a responsible person in the provincial government's Government Offices Administration Bureau by reporter: "A Responsible Person of the Provincial Government's Government Offices Administration Bureau Answers Questions by a Reporter for This Newspaper on Problems in Tea Purchases For This Year"; date and place not given]

[Text] Anhui Province has adopted some strategic measures to insure the completion of provincial-run export and domestic sales work. Some readers still do not sufficiently understand problems about this. A reporter for this newspaper invited a relevant responsible person from the provincial government's Government Offices Administration to give the following answers:

[Question] How are the directed prices in tea purchases decided?

[Answer] Tea is a major agricultural product. It is also an important commodity in China for earning foreign exchange from exports. The state practices directed management in tea prices. The State Pricing Bureau and the Ministry of Commerce communique stipulates that this year's Anhui tea purchase price float upward 20 percent for black tea from the 1979 (1983 for the purchase price of Qihong Mao tea) base of the appraised and approved directed price and floated upward 15 percent for green tea from the 1979 base of the appraised and approved price. These will be the directed prices. In order to promote tea production and make it so tea growers profit more, Anhui Province has also determined for all counties (cities) that green and black tea can float further upward or downward from the directed price. Calculated according to the directed price, each dan of Qimen black tea (fourth-class, eighth-grade medium tea) will increase 31 yuan over the original price, and Tun green Mao tea (medium tea) will increase 18 yuan. Last year after Anhui Province's real purchase price for tea was raised, income for tea growers increased more than 10 million yuan. Once the above-mentioned directed price is implemented, income for tea growers in the province can increase this year by nearly 10 million yuan.

[Question] What are provincial-run tea exports?

[Answer] In order to balance revenues and expenditures, the state issued an order-like plan for purchases, allocations, and transfers for major agricultural export products, including tea. Tea is the hot product in Anhui Province's exports. In the past all of these tea exports were exported out of Shanghai; on average 360,000 dan in unprocessed tea was contracted for export annually. Most of the foreign exchange cut went largely to Shanghai. Last year the Ministry of Foreign Economic Relations and Trade approved Anhui Province's provincial-run export of tea, and 6,600 tons was contracted with foreigners at a contracted sum of $13 million; $8.19 million in foreign exchange was already earned by the end of the year. This year the state assigned a plan for provincial-run tea exports for Anhui Province of 14,500 tons for a U.S. $30.44 million obligation in foreign exchange earnings, which is one-tenth of the provincial foreign exchange earning obligation. To complete the above obligation, 520,000 tons of Mao tea must be exported. According to the state's ruling, the province can keep 25 percent of the foreign exchange collected from planned exports; 70 percent can be kept for that portion in excess of the plan. Because of this, the more exports there are from the province's provincial-run exports, the more foreign exchange will be earned, and the more that can be kept by the province. This benefits Anhui Province's economic development.

[Question] How are fixed purchase contracts for tea to be carried out this year?

[Answer] Agricultural product monopoly and assigned purchases will be changed to contract purchases. This is a major reform of the economic system. The spring tea market was briefly chaotic last year because of a lack of experience and management work, was unable to keep up, the purchase plan for exporting black tea issued by the province was not filled, and losses in tax collection were more serious. All tea-producing counties got a handle on contract purchases earlier this year. The provincial directed purchase plan is 625,000 dan, and the signed purchase contracts of production area tea companies and supply and sales cooperatives with tea growers stipulate that 70 jin of superior fertilizer and 250 jin of coal are to be supplied for every 100 jin of tea turned in for sale. At present, the concerned departments in the province have already allocated out 330 million tons of monopoly fertilizer and more than 90,000 tons of monopoly coal. Prompt fulfillment is guaranteed. Tea purchased by supply and sales cooperatives has to have a 25-percent product tax paid on behalf of the tea growers. The price for tea which the tea growers sell themselves or for which they develop multichannel operations outside the contract can follow the market. The market price is generally higher than the purchase price of the supply and sales cooperatives, and the tea growers get an income from the high prices. This is why fertilizer, coal, and other goods and materials should not again be supplied by the state at parity. Taxes on tea sold on the market are to be paid by the tea growers according to regulations.

[Question] How is the price of staple foods regulated for tea growers?

[Answer] The state ruled in the middle of last year's price reform that the same price for sales and purchases would be practiced for the reselling of grain back to farm villages (that is, ratio prices). The price for grain rations for peasants in forestry and tea mountain districts and cotton districts would also be changed from supply according to the unified purchase price to supply according to a ratio price. Provincial grain departments have already arranged supply quotas according to the original fixed sales quota and according to the ratio price. After taking into consideration the change from the unified purchase price to the ratio price, the price per jin of grain had to increase by about 4 fen. The provincial government took into consideration that some peasants from forest and mountain tea districts could not immediately adjust to this reform, and had some trouble with purchasing staple foods. Because of this, the state allocated on four separate occasions 606 million jin in support from the quota of grain for use in adjusting the agricultural structure. This portion of grain is currently being supplied at the original unified purchase price. This, however, is only a transitional method. Once the quota has been used up, supply will be completely according to the ratio price, with grain departments subsidizing costs. Because of this, all localities should teach tea growers to energetically expand tea production, increase incomes, and not rely on eating off subsidies. Also, tea growers in fact still have somewhat higher incomes than grain growers.

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CSO: 4007/437

NEW PHASE IN STATE FARM REFORM DESCRIBED

State Farm Reform Results

Hefei ANHUI RIBAO in Chinese 28 May 86 p 2

[Article by Li Zhefu [2621 0772 1133]: "Implement the Principles of Reforming, Liberalizing, and Enlivening; Economic Growth in Anhui Province's State Farms is Sustained, Steady, and Coordinated; Obvious Results Have Been Achieved in the 'Sixth 5-Year Plan' in the Systemwide Reform of the Management System and Adjustment of the Industrial Structure, and There Has Been a Complete Turnabout in the Passive Condition of Consecutive Yearly Losses"]

[Text] Under the guidance from the CPC Central Committee's policy for reform, liberalization, and enlivening, a historically significant and far-reaching change has occurred in state-run farms, and state-run farm economies have entered a new phase of sustained, steady, and coordinated growth.

Due to the disruptions of the "leftist" line, Anhui Province's state farm system was long in a passive condition of consecutive yearly losses. The greatest yearly loss exceeded 20 million yuan. State farms did not start to gradually regain their vitality until after the 3rd Plenum of the 11th CPC Central Committee. It was principally under the guidance of the party's policy of reforming, liberalizing, and enlivening that the province's state farm system put into practice a strategic triple change. The first was to switch from a high degree of centralization and unification in the economic system over to the setting up of a new system of management according to the requirements of a fully energetic socialist planned commodity economy. Once the state implemented the complete financial responsibility of state farm enterprises, starting in 1979 the whole system pursued the output-related responsibility system. With this came a simplification of government and a release of power within leadership organs and commercial enterprises, a daring implementation of a whole series of reform measures, and--last year--the comprehensive initiation of family farms. These caused the dynamic mechanism of the state farm economies to experience a fundamental transformation and the effective mobilization of the enthusiasm of the great masses of workers. A new style state farm industrial structure was set up on the industrial structure according to the requirements of a commodity economy and implementation of reform and adjustment of cultivation, major agriculture, and the three tiers of agriculture, industry, and commerce. At present the three economic regions of Wan-nan, Yan-jiang, and Yan-huai of the whole system have essentially been formed into three major production bases for tea, fruit, and dairy products. Tea yields are one-tenth, fruit one-eighth, and dairy products one-fourth of the province's production. In addition, there has been expansion in Yan-huai of wheat and legumes in the improved variety base, and in Yan-jiang of wet rice and commodities in the grain base and sesame and spearmint in the export commodity production base. Last year's output value for the whole system's cash crops was 50.6 percent of plant cultivation enterprises, and the industrial output value was 41 percent of GVIAO. The industrial structure is in the midst of changing in the direction of being on bases, specialized, and in commodities. Last year 12 farms established economic relations with relevant units inside and outside the province, and established commercial business relations with 21 provincial cities and with more than 50 units. Twenty-four kinds of products entered the international market, and annual exports reached 13 million yuan.

The strategic turnabout in the state farm system has achieved better results. Gross output value for agriculture reached 94.63 million yuan in 1985, an 82-percent increase over 1980, and exceeded by 25 percent the task stipulated in the Sixth 5-Year Plan. State farm industrial production grew out from a seemingly empty foundation, and present annual output value has already reached 65.16 million yuan, which exceeds the Sixth 5-Year Plan by 49 percent. Nine principal industrial products were judged superior provincial products, three were judged superior ministry products, and one won a Ministry of Foreign Economic Relations and Trade certificate of merit. According to last year's statistics, the whole system established 260 commercial network outlets with more than 1,800 employees, and commercial retail sales reached 17.24 million yuan. A commercial structure has already been set up for service within the country and for opening up markets abroad. The 1985 gross output value for industrial agriculture reached 159.79 million yuan, an 85.6-percent increase over 1980. In 5-years, 31.93 million yuan in taxes were turned over to the state. Per capita worker income increased from 550 yuan in 1980 to 860 yuan. Material and spiritual life have improved considerably.

Subordinate Relation Changes Stopped

Hefei ANHUI RIBAO in Chinese 25 May p 2

[Commentary: "Thoroughly Reform and Vigorously Revitalize State-Run Farms"]

[Text] After undergoing many years of arduous pioneering work, Anhui Province's state farms have grown into an important force in the province's agriculture, become a large-scale, multiple-operation agricultural commodity production base which has more advanced technology and equipment and higher labor productivity on rates and higher commodity rates, and has made important contributions to helping with the "four modernizations" and revitalizing Anhui Province's economy. Since the 3rd Plenum of the 11th CPC Central Committee, the frontline of state farms has been under the guidance of the principles of reform, liberalization, and enlivening, thoroughly turned around the passive condition of successive yearly losses, and made state farm economies enter a new phase of sustained, stable, and coordinated growth. Currently the principle task of the state farm system is to continue to thoroughly undertake reform of the economic system, and to further marshal the huge economic potential of the state farm system.

Most recently the CPC Central Committee and State Council approved and forwarded to the Ministry of Agriculture, Animal Husbandry, and Fishery a document concerning a report on the reform of the state farm economic system. The document's contents matched the feelings of the great masses of state farm workers. The system of management of the state farm enterprises had been overhauled, but reforms were principally the subordinate relations of enterprises and had yet to involve the autonomy of enterprises nor had they solved the problem in enterprises of "eating from the big rice pot." To do this, the reform of the battleline of state farms has to center on strengthening the central link of enterprise vitality, and set about solving problems in state-enterprise and enterprise-worker economic links. On the basis of the spirit of the Central Committee, the state farm system has to be stable, and from now on state farms can avoid the tribulation of changes in subordinate relations and throw their energy into reform.

The economic potential of state-run farms is great. Equipment, technology, and human talent all greatly exceed such resources in farm villages. There is also a wealth of natural resources. This enormous potential can only be further unleashed by reform. The final goal of reform is to raise economic results, and the economic results of an enterprise can be weighed principally by seeing a most beautifully integrated state of the three kinds of results in its labor, scale, and technology. There are some state farms of no small scale, but the technological results are not high and they are still in a stage of slipshod operation. Because of this, if the enthusiasm of the laborers and the quality of the laborer is not raised the economic results will remain poor even if the scale is enlarged. The emergence of the family farm is mobilizing laborer enthusiasm. What is a good scale of operation is something that must be determined by the facts and is to suit local conditions. The best economic results will never be achieved if the facts are dispensed with and objective laws are ignored. And so, we must vigorously explore in the midst of reform the best combination of labor, scale, and technology results, and create the best economic results. The enthusiasm which will benefit mobilization of laborers must be taken into consideration.

Over their many years of development, state farm enterprises have already taken on their basic special features. They are different from both farm villages and urban enterprises. This is why the methods of farm villages and urban enterprises cannot be simply mechanically mimicked in order to do a good job of state farm economic system reform, but should start out from practice, review experience in the midst of implementation, and promptly untangle the problems run across in the course of reform in order to insure the successful forward progress of reform.

13152/9435
CSO: 4007/437

ANHUI

FEED OUTPUT, SALES REPORTED GROWING RAPIDLY

Hefei ANHUI RIBAO in Chinese 1 Jul 86 p 1

[Article by reporter Yang Yusheng [2799 0151 3932]: "Rural Areas of Anhui Province Are Using Large Amounts of Compound and Mixed Feeds; There Are Pleasing Prospects for Vigorous Development of the Commodity Economy"]

[Text] This reporter learned from the Anhui Province Feed Work Conference that concluded on 24 June 1985 that 82 large and medium-scale compound and feed plants produced more than 700,000 tons and sold more than 680,000 tons of compound and mixed feeds in 1985. From January through May 1986, they produced more than 406,000 tons and sold more than 103,000 tons of compound and mixed feeds. The peasant masses throughout Anhui have transformed outdated feeding methods and are buying increasingly greater amounts of feeds.

Anhui's feed industry has taken three major steps over the past 3 years and the proposal made by the Anhui Province CPC Committee and Anhui Provincial Government that each county (city) build a medium-sized key mixed feed plant during the Sixth 5-Year Plan has been realized. Feed output has grown year after year and Anhui moved from next to last place in China in 1983 to fourth place in 1985.

How can the pace of development in Anhui's feed industry be accelerated? Anhui Vice Governor Song Ming [1345 2494] issued four demands at the Anhui Province Feed Work Conference: (1) Perfect feed systems and actively develop concentrated protein feeds; (2) improve the quality of feed products and continually expand the number of varieties; (3) use resources rationally. A method of purchasing or exchange should be adopted for vegetable seed cakes, cottonseed cakes, and so on in the peasants' hands, and there should be greater utilization of blood powder, meat and bone powder, silkworm chrysalis powder, leaf powder, tree leaf and needle powder, feather and fur powder and so on. In addition, we should think of methods to collect them for utilization; (4) provide good post-sales services.

12539/12948
CSO: 4007/470

FERTILIZER PRODUCTION RECEIVING CLOSE ATTENTION

Hefei ANHUI RIBAO in Chinese 2 Jul 86 p 1

[Article by reporter Ni Zhimin [0242 1807 2404]: "Anhui Province's Chemical Fertilizer plants Go Into High Gear in Production To Support Agriculture --the Peasants Are Crying for Fertilizer, All Areas Must Make an Effort To Help Them"]

[Text] Since March 1986, a situation of supplies inadequate to meet demand for chemical fertilizer that had not been selling for a time has appeared throughout Anhui Province and peasants in some regions where stocks of chemical fertilizer have been sold out are extremely worried. For this reason, this reporter recently paid a visit to the Anhui Province Chemical Fertilizer Joint Development Co. Responsible persons at the company told me that the matter is receiving close attention from the Anhui Province CPC Committee and the Anhui Provincial Government and that a decision has been made to place chemical fertilizer production in an important position. They also will provide guarantees in energy resources, raw materials, capital and other areas to assure that Anhui's 54 small chemical fertilizer plants will go into high gear to produce more and better chemical fertilizer to guarantee the fertilizer needs of rural areas throughout Anhui.

Analyses by relevent people indicate that the changes in the chemical fertilizer market in Anhui over the past few months are due mainly to implementation of CPC Central Committee Resolution No 1 of 1986 and greater motivation of the peasant's initiative to plant grain. Grain is being planted again on some wasteland areas. Added to the state's policy of subsidizing lower prices for chemical fertilizer from small plants, reductions in chemical fertilizer imports from foreign countries, and other factors, the chemical fertilizer market has become a rapidly flourishing one. The appearance of this situation has brought about a turn for the better in the development of Anhui's small-scale chemical fertilizer industry and many chemical fertilizer plantss that had shut down or partially shut down have begun producing again. Output in Anhui's small chemical fertilizer industry has begun to rise gradually as a result. Output during April 1986 was up 5.2 percent over March and output in May also rose 8.6 percent over April. A rather high rate of growth has been sustained into June. Still, output from Anhui's chemical fertilizer industry still cannot meet the urgent demands of peasants at the present time. Recently, the Anhui Province CPC Committee and Anhui Provincial Government issued a clear demand concerning chemical fertilizer production throughout the province: The production tasks of 2.2 million tons of nitrogen fertilizer and 400,000 tons of increased phosphate fertilizer output specified for Anhui must be completed on time and conform to farming schedules. The 54 small chemical fertilizer plants now producing should go into high gear and produce more and better fertilizer. They should guarantee quality and produce more high-quality chemical fertilizer, while production of products that do not meet specifications must be strictly prohibited. To support the development of Anhui's small-scale chemical fertilizer industry, the Anhui Provincial Government recently undertook special research on production and sales problems for chemical fertilizer and called upon leaders at all levels to renew their understanding of the status of chemical fertilizer production and establish an understanding that a focus on chemical fertilizer production also involves a focus on agriculture and that a focus on grain also involves a focus on financial administration. In addition, they called on all departments to work to support chemical fertilizer production. Electric power departments must guarantee the electric power needs of chemical fertilizer plants and assure that the amount of electricity supplied to them is no lower than 1984 levels. Planning departments should increase raw coal supplies for chemical fertilizer production to assure that the enterprises have enough coal. The Bank of Industry and Commerce also should reinforce its support for chemical fertilizer production and allocate the necessary loans to those enterprises having the necessary conditions to restore production.

In dealing with the unprecedented developmental conditions in the chemical fertilizer industry, the Anhui Province Petrochemical Department has grasped the opportunity to formulate developmental principles for the industry as a whole to achieve additional exploitation of internal potential and strive to raise economic results in enterprises and make new contributions to agricultural production in Anhui during 1986.

12539/12948
CSO: 4007/470

SOIL IMPROVEMENT PROJECTS TERMED SUCCESSFUL

OW161821 Beijing XINHUA in English 1551 GMT 16 Sep 86

[Text] Hefei, 16 September (XINHUA)--A soil-improvement project in Anhui province, funded by the World Food Program and the International Development Association, is a "great success," said Manfred Kulessa, a Beijing-based United Nations coordinator.

Mr Manfred Kulessa wound up a visit to the project yesterday as head of a delegation representing Argentina, Australia, Belgium, Canada, France, the Federal Republic of Germany, Japan and the United States, all contributors to the project.

"We are deeply impressed with the high quality of the new irrigation ditches, roads and bridges built in such a short time," he said.

The project began in 1983, with 15 million US$15 million of interest-free loans, a free supply of 33,937 tons of wheat and 565.6 tons of cooking oil from the two international organizations and a domestic investment of 57.25 million yuan (about US$15 million).

The five year project was designed to improve Shajiang black soil, which causes low grain yields and accounts for 81.1 percent of arable land of three counties in northern Anhui province.

Over the past three years, the three counties--Suixi, Guoyang and Mengcheng--have put in 10.91 million workdays to build irrigation ditches, dig wells, put up power lines, build roads and bridges and have achieved initial results in improving 47,000 hectares of hard, sticky Shajiang black soil.

The per hectare grain yield in the area was raised from 2.41 tons in 1983 to 3.23 tons in 1985, despite drought and excessive rain. The gross income from the land has increased by 88.58 percent while per capita income increased 66.88 percent.

The U.N. official expressed hope for continued cooperation with Anhui province in improving agricultural productivity.

/12913
CSO: 4020/9

FUJIAN

SHORTAGE OF PHOSPHATE FERTILIZER

Beijing NONGMIN RIBAO in Chinese 8 Jul 86 p 2

[Article: "Shortages of Phosphate Fertilizer Resources in Fujian"]

[Text] Demand for phosphate fertilizer has been growing in Fujian in 1986 and production in the province cannot satisfy sales. The amount brought in from other provinces has declined, stocks have fallen and the contradiction between supply and demand is extremely acute.

The main reasons for the shortage of phosphate fertilizer in Fujian's markets are: (1) The area planted in superior varieties of hybrid paddy rice in 1986 was double that planted in 1985. This raised demand for phosphate fertilizer. According to statistics, agricultural materials departments supplied 300,000 tons of phosphate fertilizer between January and May 1986, up 39.2 percent over the same period in 1985. Stocks at the end of May were down by two-thirds. (2) Fujian sells 500,000 to 600,000 tons of phosphate fertilizer but produces only 300,000 tons or so and must depend on other provinces to make up the 200,000 to 300,000 ton shortfall between output and sales. A lack of sufficient motive power meant that resources from other provinces have been obstructed during 1985, which has reduced the amounts shipped in. In addition, it is difficult for phosphate ore raw materials to be brought into Fujian, which has affected phosphate fertilizer production in Fujian. (3) Imports of three types of superphosphate have been stopped and compound fertilizer resources have been reduced during 1986. Added to the substantial price decline for small chemical fertilizers, the peasants have purchased fertilizer to build up their stocks, which also has greatly increased phosphate fertilizer supplies.

Many rural supply and marketing cooperatives now are unable to provide supplies because of inadequate phosphate fertilizer resources. According to forecasts, the situation can be alleviated only by bringing in 5,000 tons phosphate fertilizer per month from other provinces. Otherwise, agricultural production during the second half of 1986 will be affected.

12539/12948
CSO: 4007/470

GUANGDONG

SOLUTIONS PROPOSED FOR PROBLEMS IN PROVINCE'S SUGAR INDUSTRY

Guangzhou GUANGDONG NONGYE KEXUE [GUANGDONG AGRICULTURAL SCIENCES] in Chinese No 2, 8 Apr 86 pp 12-15, 25

[Article by Zhuang Xuetiao [8369 1331 6148] and Liang Guangkun [2733 1639 3540], Cane Sugar Research Institute, Ministry of Light Industry: "Study of the Development of Guangdong's Cane Sugar Industry To the End of This Century"]

[Text] Guangdong has obvious advantages and favorable conditions for development of the cane sugar industry. This is because of the favorable factors of geographic location, the history and foundation of the cane sugar industry and liberal policies for the special economic zones, as well as the broad influence of the three major social, economic and ecological benefits deriving from cane sugar itself, and the fine economic results it produces. Consequently, Guangdong has become an important national base for the production of sugar, which is a major economic mainstay of the province.

1. New Situation in Guangdong's Cane Sugar Production

(1) Setting Historical Records

Guangdong scored very great achievements in cane sugar production during the 1984-1985 crushing season producing 1.6 million tons of sugar for an all-time high for cane sugar production in Guangdong. This was an increase of 491,000 tons over the previous crushing season for a 44 percent rate of increase. Forecasts call for a sugar output of 2 million tons for the province during the 1985-1986 crushing season. Such a rate of growth has been rare in the history of cane sugar in Guangdong.

In 1985, Guangdong Province grew 6.18 million mu of sugarcane, 1.69 million mu more than in 1984. Both the extent of the growing area and the amount of expansion were also unprecedented in Guangdong. As a result of the expansion of the cane fields, the concentration of the cane growing area in continuous tracts and the intensification of production became new features of Guangdong's cane sugar industry.

(2) New Trends in Reform of the Cane Sugar Economic System

1. The monopoly sale system for sugar has come under fire. Institution of a monopoly sale system for sugar played a positive role in giving impetus to cane sugar production. However, a new situation has come about. First, the former pressing shortage of sugar has moderated. Second, as a result of steady changes in the industrial structure of the national economy, the relative importance of the sugar industry in the national economy has declined (though the direct industrial and agricultural output value of Guangdong's cane sugar industry reached 2.6 billion yuan in 1984, this was still far from the more than 13 billion yuan output value of newly founded township and town enterprises). Third, the ever present large amount of crash planning in the make-up and patterns of rural crops and the need for highly fresh sugarcane raw material militate against the longstanding command style cane sugar production plans.

2. Conflicts among the separate jurisdictions of farming, industry and business are conspicuous and show up mostly in the inequitable distribution of profits. Institution of flexible prices for sugarcane in 1984 brought material benefits and fewer frustrations for cane farmers, thereby firing up their enthusiasm for production. Nevertheless, profits going to industry and business remain inequitable. Production costs for a large sugar refinery are 637 yuan per ton of sugar (the 1984 average for the province as a whole), plus a 220 yuan sugar tax for a total of 857 yuan. The sugar sells for 1,000 yuan, so profit to the sugar refinery is approximately 143 yuan. However, for most medium size sugar refineries, costs run as high as 740 yuan or more per ton, so after the addition of sugar taxes, the profit on sugar amounts to only about 40 yuan per ton. If there is a shortage of sugarcane or if natural or man-made disasters occur, sugar refineries may lose money. Yet businesses that deal in sugar make a profit of 200 yuan on every ton of sugar they sell, and another 160 yuan is made when the sugar is sold at retail for a gross output value for business of as much as 360 yuan. After costs have been subtracted, their net profit is still much higher than industry's. High profits for industry and miniscule profits for business would hamper the circulation of products, of course; however, high profits for business and miniscule profits for industry that occasion losses hamper the expansion of reproduction by industry or may even bring about a halt in production.

2. Increase in the number of households specializing in the growing of sugarcane have played a role in the intensification of production. The rise of households specializing in the growing of sugarcane is an inevitable outgrowth in development of the rural economy, is an effective way of bringing about intensive production from cane fields and increasing results, and is an important way of making sure that sugarcane will be available for sugar refineries. As a result of their intensive production, specialized households both produce the benefits of scale and provide an assured supply of sugarcane for sugar refineries. They are a fine vehicle suited to the new situation.

(3) The Cane Sugar Industry Strides Toward Integrated Production

Cane sugar industry integrated production includes all-round use of dynamic space in cane fields, multiple uses of sugarcane itself, production of many different kinds of products from raw sugar and fullest use of sugar refinery by-products at many levels.

By all-round use of dynamic space in cane fields is meant use of the space between rows and of water ditch space,and use of the shade produced by sugarcane in fields for a suitable amount of intercropping, raising of edible fungi, the rearing of fish, etc.

Multiple uses of sugarcane itself means not only the storing of cane leaves and bagasse for use as green fodder or using them directly to feed cattle, sheep, goats and fish, but also use of the tender tips of sugarcane (that contain many kinds of amino acids and anti-carcinogens) to make beverages. If sugar is crushed from these, the amount of cane sugar obtained from the raw materials can be increased.

In addition, if sugar refineries were to process fully the raw sugar that they produce, they could increase refinery profits and create wealth for the society because each processing of raw sugar increases its output value once.

Output value is also very high from the full use of the bagasse, molasses and filtrate, which are principal by-products, and the proliferation of more than 10 kinds of products from them.

(4) New Achievements in Development of Agricultural Techniques

New fine varieties of sugarcane that have been demonstrated or evaluated in recent years include "Aonong 76/169," "Zhanzhe 72/426," "Yacheng 71/119," and varieties from other provinces (or regions) including "Guitang No 11," "Guitang No 7," "Ganzhe No 14" and "Taitang 172." These are all early maturing varieties with a high sugar content that produce high yields. Acceleration of the demonstration and spread of these fine varieties will have positive significance for solving the present shortage in Guangdong of early maturing raw materials containing a high sugar content.

Rational techniques of nitrate, phosphate and potash fertilization have been demonstrated and promoted in more than 300,000 mu of Guangdong's cane growing area in recent years, and results in increased yields and increased sugar content have been remarkable. Further research is now being conducted in prescribing fertilizer to match soil needs in cane fields by way of improving cane field fertilization techniques. Use of cane borer lures in forecasting and reporting borer infestations is now being promoted over a several hundred thousand mu area in the Zhu Jiang Delta, and further use is being made of information in research on prevention and control.

2. Predictions on Growth of Cane Sugar Production by the End of This Century

The following forecast is made on the basis of historical trends in the growth of cane sugar production in Guangdong Province and existing conditions for development, taken together with the rise in society's needs and estimates of the future economic situation and technical advances.

(1) Prediction Results

In 1990 and 2000, Guangdong's sugarcane growing area will be 6.3 million and 6.8 million mu respectively, the harvest area amounting to 6 million and 6.5 million mu (approximately 95 percent of the growing area). Industrial yields per unit of area will be 3.703 and 4.301 tons per mu. The sugar yield rate for sugarcane will be 11.66 and 12.5 percent respectively. Sugar output will be 2.59 million and 3,464,000 tons respectively. (See table).

Forecasts On Development of Cane Sugar Production in Guangdong By 1990 and 2000

Forecast Step	Year	Area (10000 mu)		Output tons/mu		Gross Output (10000 tons)		Sugar Content	Sugar Yield Rate	Gross Output Sugar (10000 tons)
		Agri.	Ind.	Agri.	Ind.	Agri.	Ind.	(%)	(%)	
I	1990	461.0	417.0	3.249	3.317	1419.7	1267.2	12.756	11.461	141.23
	2000	559.5	500.2	3.491	3.746	1752.0	1576.7	12.486	11.390	174.38
II	1990	630	600		3.703		2221	13.08	11.66	259.0
	2000	680	650		4.301		2795	14.03	12.50	349.4

2. Forecasting Methods and Basis

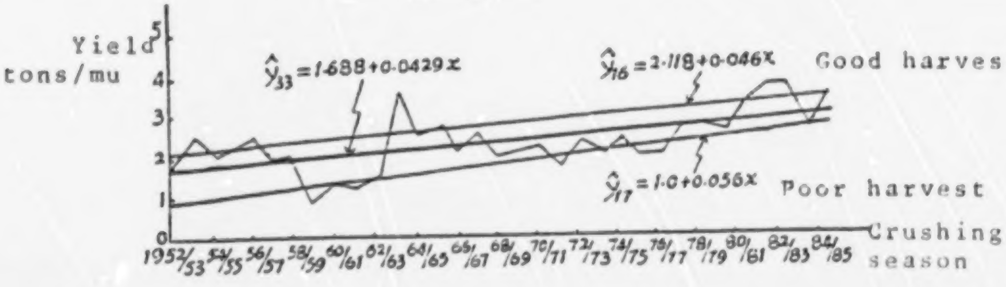
(1) The particulars provided under "Agriculture" for Step I in the table were derived from straight line regression applied to data from the Provincial Rural Development Research Center for the 36 years from 1949 through 1984. The particulars found under "Industry" and information for cane sugar content, sugar output rate and gross output of sugar were derived by applying straight line regression to Provincial Sugar and Paper Industrial Company data for the 33 year period from 1952/1953 through 1984/1985.

(2) Step II: The three indicators for cane growing area, cane yields per unit of area (industrial) and sugar output rate were selected from among six indicators for use in forecasting, and the forecast values for gross output of cane and gross output of sugar were calculated.

Sugarcane growing area: For the sugarcane growing area to leap from 4.2 million mu to 6 million mu in 1995, if the results forecast in step I are used, a growing area of only 5 million mu by the year 2000 is unrealistic. Therefore, the actual harvest areas (industrial) for 1990 and 2000 have been set at 6 million and 6.5 million mu respectively. The basis for this is as follows: First, the historical pattern shows that following a single spurt in the sugarcane growing area in 1985 there was an inevitable stabilization process and even a possible decline. This is not to mention that in 1985 a substantial part of the new cane growing area was obtained from the conversion of wetlands. Now, however, it has been determined that the conversion of too much wetland to the growing of sugarcane has had a directly adverse effect on the amount of grain available; thus, it is possible that in the midst of stabilization of the sugarcane field area there may be a decline. Therefore, we proposed a 6 million mu target for the sugarcane harvest area in 1990. Second, the 6.5 million mu forecast for 2000 comes mostly from the 6 million mu for 1990 augmented by reclamation of land from the sea in coastal areas, from lowlands along the Dong, Xi and Bei rivers, and from the cultivation of dryland slopes on Hainan Island and the Leizhou Peninsula. Though bringing these areas under cultivation is much more difficult that changing the kind of crops grown, there has to be a limit to the potential for changing crops since grain production will likely remain the foundation for Guangdong over the next 15 years.

Sugarcane yields per unit of area: History has shown that sugarcane yields per unit of area are always subject to meteorology, policies and other factors; consequently, adequate account has been taken of these influencing factors. In this connection, the regression line we used in step I is a "base line" (i.e.,output trend). The points that appear atop this regression line define a new regression line from which the positive values for 1990 and 2000 are forecast, which are termed good harvest year values. Likewise, the negative values defined below this regression line define bad harvest year values (See figure). The difference between these two values, plus the base line values have been used to forecast the industrial yields for 1990 and 2000 to be 3.703 and 4.301 tons per mu. Practice has demonstrated that given the meteorological conditions of the past 33 years, variations during the succeeding 15 years are not likely to be very great. Technological progress in the spread of agricultural techniques will also be slow. It is political factors that may have a substantial effect on forecast values for sugarcane and that are difficult to get a handle on. As economic reforms become more pervasive, it is believed that the role of future policy factors on cane sugar production should become a positive value (in terms of the overall trend); however, we also do not rule out a pattern of expansion in the growing area being in inverse ratio to average yields per unit of area, with average yields per unit of area from 6.5 million mu of sugarcane being lower than the average yields from 4.2 million mu in the past, thus being a negative value. Though this positive and negative are not entirely equal, we have no more reason for revising this forecast value. We can only make revisions of this rough calculation as practice dictates, because it is already a big step ahead of a rough estimate based on nothing.

GUANGDONG PER UNIT AREA SUGARCANE YIELD, 1952-1985



Regression of Sugarcane Yields Per Units of Area in Guangdong For 33 Years

Rate of sugar yield from sugarcane: The target sugar output rate for 1990 shown in the table is 11.66 percent. This is an average value for the past 33 years, is a target that has yet to be achieved during the 1980's, and is one that we want to attain again. The sugar output rate for 2000 is 12.5 percent, a rate that has been achieved only once (1973/1974) since founding of the People's Republic. This is predicated on the general application throughout the province of a procurement policy whereby price is set according to quality in the year (1990) the Seventh 5-Year Plan is completed, giving rise to the promotion of fine varieties with a high sugar content. If an average cane sugar content of 14.03 percent can be attained for the province as a whole by the year 2000, attainment of this 12.5 percent sugar output rate will be possible.

(3) Estimate of Realization of Direct Benefits From this Forecast

1. Substantial satisfaction of the province's need for sugar. According to this estimate, by the year 2000 when Guangdong is producing 3,494,000 tons of sugar, if half of Guangdong's annual output (1.75 million tons) is made available to the country as a whole, and if Guangdong has a population of 73.49 million by the year 2000 (estimate by Zheng Tianxiang [6774 1131 4382] of Zhongshan University), annual sugar consumption per capita can average 48 jin. This is 18 jin more than the current 30 jin per capita consumption level and will basically satisfy society's needs.

2. Calculating this estimate's direct output value. When 27.95 million tons of sugar cane raw material are being produced in the year 2000, at a value of 77 yuan per ton of sugarcane (with increase in the fuller use of cane sugar, by the year 2000 the value of each ton of sugarcane raw material will increase and will, with a 10 percent price increase, total 77 yuan per ton), direct output value created by cane farmers will be 2.15 billion yuan. Further, when an output of 3,494,000 tons of sugar is attained, because of a greater output value from further refining of sugar products, a ton of sugar will have an output value of 1,100 yuan (an additional 10 percent); hence, the gross output value of raw sugar will be 3.84 billion yuan, and the gross output value of cane sugar will be 6 billion yuan, three times the 2 billion yuan industrial and agricultural output value of the 1981-1982 crushing season.

3. Policy Decisions, Actions and Conditions

(1) Our Humble Opinions on Cane Sugar Economic System Reform

1. Abolition of the "sugar monopoly" system. Adoption of "delegation" as a principle, delegating to local governments and delegating authority to enterprises; adoption of fixed amount quotas for sugar to be handed over to the state, the price of sugar in excess of quotas fluctuating; "substitution of tax payments for profit delivery," enterprises being responsible for their own profits and losses; permitting competition, bringing about cane sugar regionalization through competition. The foregoing should make full use of the enthusiasm of local governments and enterprises and bring about a greater

suiting of general methods to local situations, each area functioning to the best of its ability.

2. Reform of the existing method of operation whereby agriculture, industry and business share responsibility. Local government or enterprises should serve as a foundation for the organization of a cooperative agricultural, industrial and business economic entity to promote development of the sugar industry in the direction of integration.

3. Reform of the centralized procurement and assigned procurement quota system for sugarcane raw materials, instituting a contract system for sugarcane within a cooperative entity; further consolidation and development of a flexible price policy for sugarcane raw material; eradication of the practice whereby the country bears part of the price burden in flexible prices for sugarcane, adopting a system whereby those who reap the benefits bear the burdens.

(2) Institution Throughout the Province of a Policy of Determining Price On the Basis of Quality by the End of the 1980's

History has shown that a decline in the sugar content of sugarcane is one of the major problems existing in the province's cane sugar. It exerts a drag on sugar output, and it is also an important reason why sugar refineries lose money. Institution of a policy of setting prices on the basis of sugarcane quality must be accelerated.

A certain amount of progress and achievements have been made during the past 4 years in quality standards, inspection methods and final settlement methods as a result of which sugarcane farmers pay serious attention to sugarcane quality and are happy to grow fine varieties with a high sugar content to the benefit of pilot project sugar refineries and sugarcane farmers. Nevertheless, because of inadequate understanding, most sugar refineries and cane growing areas do not pay sufficiently serious attention to these matters. Some fear they may suffer economically during the trial period. In other cases, progress in this work is not rapid because the necessary conditions do not exist in sufficient degree or because of technical problems. Thus, it is necessary to provide more publicity and to hasten the pace of research by proceeding from realities, requiring full implementation throughout the province beginning in 1990 to make a contribution in turning around, as quickly as possible, the decline of sugar content in the province's sugarcane.

(3) Tapping of Potential, Improvements and Expansion As Primary Means of Increasing Sugar Refining Capacity

Guangdong Province currently has a 130,000 ton per day crushing capacity for processing and refining sugar. On the basis of a 150 day crushing period (the maximum limit), approximately 20 million tons of cane can be processed. On the basis of the aforementioned regression forecasts of a gross output of 20.37 million tons of sugarcane by 1988 (5.7 million mu with a yield of 3.57 tons per mu), this capacity will suffice. But, for further development of sugarcane resources, an increase in processing capacity will be needed. The key here is still a strategic program that emphasizes primarily the tapping of potential in existing plants, making improvements in them and enlarging them, because this can save between 40 and 50 percent of the investment that would be needed to build new sugar refineries, and production can begin more quickly. After 1990, however, further consideration will still have to be given the issue of expansion and new construction of sugar refineries. Results of calculations show that during the 1990's, gross output of sugarcane will increase at an average rate of 574,000 tons per year. This means the new construction each year of a sugar refinery with a 4,000 tons per day processing capacity (during a 140 day crushing season). This will require the construction of 10 new sugar refineries during the 1990's, each with a 4000 tons per day capacity to satisfy the need to process 27.95 million tons of cane by the year 2000. When that time comes, Guangdong's daily crushing capacity will reach 200,000 tons.

The location and size of these new sugar refineries will be closely related to the geographic distribution and density of the new sources of sugarcane. In light of the direction of development of new sugarcane fields during the next 15 years, in addition to newly reclaimed land along the shores of the Zhu Jiang Delta and lowlands along its rivers, where a definite potential for development exists, a policy of hastening the building and development of cane fields on the Leizhou Peninsula and on Hainan Island is correct.

(4) Bolstering of Sugarcane Agricultural Technical Development Research

Hastening of steady growth of the cane sugar industry depends not only on correct sugar industry policies but also on technical progress, and this has to be founded on basic targets of high yields, high sugar content and high economic results. Technical progress has made a major contribution to the Guangdong cane sugar industry for many years. Take fine varieties, for example, from which accumulated economic benefits amounting to 850 million yuan have been derived alone from Guangdong's promotion of "Yuetang 57/423" and "Yuetang 63/237". Balanced fertilization with nitrate, phosphate and potash has produced more than 60 million yuan in economic benefits for industry and agriculture in a single year. Tens of millions of yuan have also been saved each year from the prevention of insects, the control of diseases and the eradication of weeds.

The principal anomaly prevailing in the province's sugarcane production today is: an insufficient amount of early maturing sugarcane with a high sugar content. Action on this problem requires, first of all, that major efforts be made as quickly as possible to breed a number of fine varieties of sugarcane that are early maturing, have a high sugar content and produce high yields so as to satisfy sugar refineries' need to start crushing early or even to advance the date when crushing begins. Advantages to be gained are advancing and lengthening the crushing period, reducing conflicts between industry and agriculture, and helping implement a policy of pricing on the basis of quality. For the moment, it is necessary, primarily, to do everything possible to promote existing early maturing fine varieties that have a high sugar content---fine varieties such as "Yuetang 63/237," "Yuenong 76/169" and "Guitang No 11." At the same time, firm grasp has to be taken on the accelerated breeding and authentication of other fine varieties. Second, all cultivation measures that provide more and better early maturing, high sugar content raw material should be vigorously demonstrated and promoted. This includes techniques for balanced fertilization of sugarcane with nitrate, phosphate and potash, which are already being promoted; the growing of seedlings under plastic mulch for transplanting; the suiting of general methods to specific locations for the growing of autumn and winter sugarcane and perennial sugarcane; use of sugarcane borer lures for forecasting and reporting and for prevention and control; hastening of techniques for the formulation of fertilizer to match the soils on which they are to be used; use of data on sugarcane borers, use of chemical ripening agents for sugarcane and other such research.

(5) Gearing to the Market With Development of Sugarcane Resources and New Products

1. Opening of new avenues in livestock fodder. All sorts of livestock fodder may be made from the tips of sugarcane, molasses and bagasse.

2. Development of high quality beverages from sugarcane tips. The tender tips of sugarcane are rich in nutrients that can be made into sugarcane tip beverages with a distinctive flavor, the production of which is easy. When used for the crushing of sugar, this would also help increase the amount of sugar obtained from the cane.

3. Development of particle board production through the use of bagasse. Today when more houses and furniture are being built and there is already a scarcity of lumber, use of bagasse to make particle board is a good way to save timber and fill market needs.

(6) Scientific Research Expenses Must Come From Sugar To Benefit Sugar

For a long time, most of the expenditures for research on cane sugar in Guangdong have been obligated from government operating expenses. This source of funds is deflected, indirect and frequently is not suited to needs. It is even less easy to dovetail scientific research with production. As a result, scientific research is divorced from production. As reform of the economic system has progressed, government allocations of funds for scientific research endeavors have contracted. Though this helps force the lateral development of scientific research and gives impetus to the better application of research to production; it ultimately lies at the root of no solution to problems. We feel that fundamentally scientific research and production should form a whole that is linked by common interests so that scientific research is truly in tune with production and production in tune with research. Attainment of this goal requires policies that provide explicitly for a body of specific methods whereby scientific research expenses derive from sugar and benefit sugar.

9432
CSO:4007/440

GUANGDONG

BRIEFS

GUANGDONG INCREASES FERTILIZER OUTPUT--The province's 72 large, vthium and small chemical fertilzier enterprises support agricultural production in this year's winter and next year's spring. Between January and August, they increased the supply of chemical fertilizer to agriculture by 180,000 tons compared to the same period last year. But the demand is not yet totally satisfied. The province's competent departments recently urged them to produce over 1.05 million tons more chemical fertilizer between September and December. The province's departments concerned have made arrangements for the supply of coal, oil, iron and phosphate ores for the production. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 22 Sep 86 HK] /7358

CSO: 4007/19

BRIEFS

SUGAR EXPORTS--From January to July, Guangxi exported 270 percent more sugar than the same period last year. From January to July, sugar output was more than 670,000 tons, a more than 50 percent increase over the same period last year; the province procured 600,000 tons, an increase of 48 percent over the same period last year. [Excerpts] [Beijing ZHONGGUO SHANGYE BAO in Chinese 18 Sep 86 p 3]

CSO: 4007/26

HEBEI

DEVELOPMENTS OF SUPPLY AND MARKETING COOPERATIVES

Shijiazhuang HEBEI RIBAO in Chinese 30 Jun 86 p 1

[Article: "Hebei Province's Supply and Marketing Cooperative System Has Formed a Preliminary Multiform Service System"]

[Text] Supply and marketing cooperatives at all levels in Hebei Province have responded to the urgent peasant demand of "longing for prosperity, thoughts about services" and are treating promotion of the development of the rural commodity economy and good systematized services as an important task of reforms. They have set up a preliminary comprehensive service system that integrates "full integration, networks, and bridges" by combining companies, cooperatives and stations in the Hebei Province supply and marketing cooperative system. They have played an obvious role in rural economic development and assisted the peasants in overcoming their poverty and becoming prosperous and in reinforcing the economic strengths of supply and marketing cooperatives. Sales and total profits from January to April 1986 for Hebei Porvince's supply and marketing cooperative system as a whole were up 18.14 and 13.12 percent, respectively, over the same period in 1985.

"Bureaucratic" work styles have been eliminated and guiding ideologies have been corrected during reforms in supply and marketing cooperative systems. The focus has been shifted to the peasants by dealing correctly with the relationships between management and services and between enterprise results and social results. Provision of good services and improvement of social results have been given first-place status. Services are provided according to what the peasants need. Three types of service systems now have taken preliminary shape in Hebei Province: "full integration, networks, and interconnecting bridges." The first type focuses on staple and key products and provides the peasants with "fully integrated" systematic services before, during and after production. More than 90 county (city) supply and marketing cooperatives have established 243 "fully integrated" service systems. The second type is based on the characteristics of diversification and decentralization of commodity products and establishes various types of comprehensive service networks including information, technology, capital, purchasing and selling, processing, storage, and so on for products and industries to develop multifunctional services. Hebei's supply and marketing cooperative system has established 281 information service organs with more than 4,000 specialized (concurrently appointed) information personnel that have formed a top-to-bottom supply and marketing cooperative information service network that has provided the peasants with more than 104,000 pieces of market information for all types of commodities. The third form is aimed at medium-sized cities and rural market towns and focuses on information and purchasing and selling services. More than 90 trade service organs have been set up to use these organs and circulation service facilities through emission and attraction to expand channels and play a role as "three-dimensional intersecting bridges" that allow commodities to circulate freely everywhere and without impediment. Comprehensive services in Hebei's supply and marketing cooperative system now has formed a new situation of "100 dragons taking flight, 1,000 bridges standing like forests, networks running vertically and horizontally."

Supply and marketing cooperatives at all levels have established multilayer specialized service organs to satisfy the demand for socialized services. One thing is that the former "big and complete" companies of supply and marketing cooperatives have been divided up into "small and specialized" companies, or new specialized companies have been organized according to demand. Hebei now has 257 specialized companies. These specialized companies have abandoned the old models used for organizing companies and they take their purpose of service seriously. They use independent accounting, independent management decisionmaking, and fewer management personnel. Their economic results have been good and they truly have formed into something with economic interests identical to those of the peasants. Second, grassroots supply and marketing cooperatives in base areas for export commodity production and in regions for concentrated fresh and live commodity production have organized more than 200 specialized cooperatives to try out integrated production and administration. The Zhoucun Supply and Marketing Cooperative in Jixian County organized 57 specialized households in four townships to set up a production cooperative to raise chickens that "provides systematic services for a 100 yuan share." The cooperative has taken over responsibility for providing improved chicken varieties, compound feeds, disease prevention, processing, storage, and sales, and it distributes profit dividends and has been warmly received by the masses. Supply and marketing cooperatives throughout Hebei also have linked up with rural collectives, individuals, and specialized households to establish more than 800 wholesale service cooperatives. The third thing done is the establishment of more than 2,400 agricultural means of production service stations in rural areas that have developed soil testing and fertility analysis, setting appointments for orders, sending materials into the villages and providing services to households. They have integrated administration and technical guidance, supply, and results of utilization that have provided conveniences to the peasants, increased real results and also expanded sales.

The establishment of multilayer, multiform and multifunction comprehensive service systems by supply and marketing cooperatives in all areas and the development of systematic services has played a positive role in promoting the development of commodity production in rural areas, guiding the peasants onto the road of common prosperity and improving the economic results of purchasing and sales services in all supply and marketing cooperatives. Hebei Province's supply and marketing cooperative system provided the peasants with more than 5.2 billion yuan to assist the development of commodity production and the masses received benefits of 3.5 billion yuan in 1985, up 8.3 and 6.7 percent, respectively, over 1984. Hebei provided assistance to 660,000 specialized households and 210,000 poor households. A situation of "three amounts exceeded" (plans exceeded, the previous year surpassed, highest level in history) has been seen in supply and marketing cooperative system sales in Hebei for 4 years in succession.

12539/9190
CSO: 4007/468

TOBACCO INDUSTRY SHOWS 'SUBSTANTIAL INCREASE' IN PROFITS

Shijiazhuang HEBEI RIBAO in Chinese 25 Jun 86 p 1

[Article: "Hebei Province's Cigarette Industry Achieves a Substantial Increase in Profits—a Loss of Control Persists in Cigarettes Brought from Other Provinces in Excess of Plans, the Yongnian County Candy, Tobacco and Liquor Co. Receives an Economic Fine"]

[Text] Hebei Province recently has been adhering closely to the "Tobacco Monopoly Regulations" and the spirit of related instructions from the Hebei Provincial Government. Production and sales of cigarettes both are doing very well in Hebei, with the cigarette industry making more than 120 million yuan in profits and taxes from January through May 1986, up 32.8 percent over the same period in 1985.

Under leadership by the Hebei Provincial Government, all prefectures and cities in Hebei have established tobacco monopoly bureaus or independent tobacco companies during 1986. More than 120 counties have begun to implement tobacco monopoly administration and have promoted the development of cigarette production. More than 320,000 cartons of cigarettes had been produced and more than 550,000 cartons sold by the end of May 1986, up 13.3 and 9.8 percent, respectively, over the same period in 1985. This includes over 110,000 cartons of Class A and Class B cigarettes, more than double the amount during the same period in 1985. The first category product rate for cigarettes was 93 percent. The present situation indicates that the need for completing more than half of plans in more than half of the time will be met in all indices.

The main problem at present is that established tobacco monopoly organs at all levels require further perfection and must play their roles fully. The more than 70 counties with output of 4,000 cartons and up per year should take the overall situation into consideration and work closely to establish monopoly organs to strengthen administration of monopoly work. Cigarettes from other provinces in excess of plans continue to flow into Hebei and there has been a rather serious loss of control. More than 290,000 cartons of cigarettes from other provinces were purchased and shipped into Hebei between January and May 1986, including more than 160,000 cartons in excess of plans, which has seriously disrupted the cigarette market in Hebei. This is especially true of the Yongnian County Candy, Tobacco and Liquor Co., which failed to follow orders and did not stop. It failed several times to heed instructions from the Hebei Provincial Government and relevant leading comrades and illegally purchased and brought in more than 2,800 cases of cigarettes worth more than 53,000 yuan from other provinces since May 1986. Recently, the Yongnian County Industry and Commerce Administrative Management Bureau implemented the details of the "Tobacco Monopoly Regulations" and relevant decisions made by the Hebei Provincial Government, fined the company more than 100,000 yuan and ordered it to prepare a written investigation. Vice Governor Ye Liansong [0673 6647 2646] recently explained in regard to the large influx of cigarettes in excess of plans from other provinces: "We must organize forces for a strict investigation and implement and honor regulations contained in past documents, and we must organize a group of cadres with a strong sense of responsibility to make investigations in areas with the most problems. We should work in conjunction with local industry and commerce administrative management and other departments and focus on several examples and hold accountable those cadres who have been irresponsible or willing instigators. The hole that allows the influx of cigarettes in excess of plans must be plugged."

12539/12851
CSO: 4007/464

HENAN

BRIEFS

FEED OUTPUT, SALES--As of the end of June, Henan province produced 412,000 tons of mixed and compound feed, fulfilling the annual plan by 172 percent, an increase of 151.4 percent over the same period last year. Sales of mixed and compound feed were 439,000 tons, an increase of 171 percent over the same period last year. There are 1,844 grain control stations in the province, 1,330 sell feed, and 657 are involved in feed processing. [Excerpts] [Beijing ZHONGGUO SHANGYE BAO in Chinese 19 Aug 86 p 1]

CSO: 4007/26

RURAL READJUSTMENT, REFORM DURING 1985 EXAMINED

Beijing LIAOWANG [OUTLOOK WEEKLY] in Chinese No 16, 21 Apr 86 pp 19-20

[Article by Tian Zhuang [3944 8369]: "A Look At Rural Readjustment and Reform in Terms of Hubei Province"]

[Text] 1985 marked the first year in the second step of rural reform in China. What was accomplished in rural economic reform and readjustments during this year? We would like to use some facts about Hubei to answer this question that people follow with great interest.

A look at some figures given below might be helpful:

Gross output of grain was 44.3 billion jin making 1985 the second all-time high year.

The cotton growing area was controlled by plan. Gross output was 9.84 million dan.

Gross output of oil-bearing crops was more than 14 million dan in an all-time high.

Gross output of various kinds of hemp was 6.26 million dan for an all-time high.

Comparison of cash crop outputs with 1984, silkworm cocoons excepted, shows a 45 percent increase in fruits, a 3.8 percent increase in tea, a 54 percent increase in tobacco and a more than 30 percent increase in vegetables.

Hogs in inventory numbered 2.03 million more than during 1984; the number of poultry increased by 30 million, and poultry egg output increased by 160 million jin.

The gross output value of agriculture for the province as a whole was 16.2 billion yuan for a 1 billion yuan increase over 1984. Per capita income was 420 yuan, 28 yuan more than in 1984.

In general, Hubei Province scored breakthrough progress in 1985 in the stabilization of its grain production, in control of its cotton production, and in the development of economic diversification and its animal husbandry. The agricultural foundation was strengthened as a result of reform and readjustment.

These achievements were not won easily. Initially some cadres and farmers were not fully prepared mentally for the second step in rural reform. Some people one-sidedly supposed that "structural reforms will mean a loss of farmland; hard work and doing business is the only road to riches." In some places a situation appeared for a time of "going in for industry with great dynamism and going in for business in a bustling way, while going in for agriculture in a cheerless manner." As a result the number of people engaged in clothing, food, weaving, construction and service businesses shot up. In some places farming was abandoned and the fields lay fallow for a time.

At that time, all jurisdictions were preparing to cut the grain growing area by 7 percent. A reduction of this magnitude would mean a decrease of approximately 5 million mu or more in the grainfield area. Clearly this would seriously impair grain production. A decline in grain production would mean a decline in other industries as well. Understanding this, organizations at all levels in Hubei Province resolutely carried out a program of "positively no relaxation of grain production while actively developing economic diversification," and the seeking of truth in facts to control the reduction in the grain growing area at 3 percent. At the same time, all jurisdictions took three matters firmly in hand as measures for increasing grain production as follows: Increase in the growing of hybrid rice; full use of the potential for increased yields of grain bases, and increase in the growing of corn using plastic mulch. These measures not only stabilized the overall situation in grain production for the province as a whole, but also further increased economic diversification. Breakthrough advances were also scored in animal husbandry, which had stagnated for many years without moving ahead.

Today, the following new changes have appeared in Hubei Province's rural economy:

--The make-up of rural industry is gradually becoming more rational. Statistics show a 2.5 million mu decrease throughout the province in the cultivated land that is unsuitable for the growing of either grain or cotton. This has been used largely for the digging of fish ponds, the growing of lotus root, the planting of hemp crops and expansion of fruit orchards for marked increase in economic results. Representative samplings show that following readjustments in farmland not suited to the growing of grain, output value averaged 279 yuan per mu for a 39.5 percent increase in output value. Following readjustment of farmland not suited to the growing of cotton, output value averaged 227 yuan per mu for a 12.9 percent increase in output value. The pattern that has existed for many years of an undiversified grain and cotton economy has begun to be broken.

--First steps have been taken along the road of integrating farming, the breeding of aquatic products and processing. Now, when they farm their fields, peasants no longer regard grain as a final product, but rather as a "turnkey" for the development of other industries. When getting ready for grain production at the beginning of the year, quite a few peasant households include as part of their plans the grain that will be needed to develop the raising of hogs, fish, chickens and ducks, and for the food processing industry. When the grain grown by some large scale fish rearing and food processing households is going to be insufficient, contracts for the purchase of grain are signed with some households that produce large amounts of grain. Rural sugar mills, flour mills, distilleries and bean curd shops have mushroomed in a thriving scene.

--Peasant enthusiasm for the development of a commodity economy has risen. Formerly peasants were "tillers" who knew only how to bury themselves in growing grain. Today, with the development of a rural commodity economy, they have become "economic persons" who have learned to have sharp eyes for market conditions and keen ears for information from everywhere. In 1985, not only did large numbers of peasants develop commodity production on the basis of market needs, but they also began to enter the realm of commodity circulation actively engaging in the buying and selling of agricultural and sideline products. The renowned Jiang Hanping [3068 3352 1627] has taken the first steps toward creating a distinctive and open style market devoted to agricultural and sideline products and a place for the concentration and distribution of commodities.

What is to be done in 1986? Provincial Animal Husbandry Department Director Cheng Yuntie [4453 6663 6993] told the correspondent that rural reform and readjustment in Hubei had merely taken the first step, and that the daunting tasks still lay ahead. They were determined to consolidate, digest, flesh out and perfect reforms that have already been made, keeping the beneficial ones and getting rid of the unbeneficial ones to get better benefits from reform. At the same time, they would focus on new situations and new problems currently emerging everywhere, would take firm hold on the five links of readjustment, the foundation, reserve strength, channels, and vitality for further strengthening of the foundation that agriculture is.

By readjustment is meant further straightening out of proportional relationships among the three levels of farming, the aquatic products breeding industry and animal husbandry.

By the foundation is meant adherence to a strategic program of "agriculture is the foundation of the national economy." To a very large extent "no stability without agriculture" means "no stability without grain." Maintenance of sustained and stable development of grain production is necessary, using this thinking to guide the straightening out of the relationship between grain and economic diversification.

By reserve strength is meant increasing investment in agriculture, improving production conditions and bolstering the ability of agriculture to withstand disasters.

By channels is meant an increase in new business channels, linking agriculture and business and agriculture and industry to build a new form of commerce.

By vitality is meant reliance on increased investment and the promotion of science and technology to develop the commodity economy.

Hubei Province has linked the foregoing to realities in the formulation of plans for 1986 calling for adherence to "major stability and minor readjustments" within the farming industry, keeping the extent of decrease in the grain growing area to 1 percent while placing efforts on raising yields, on increasing varieties, on improving quality and on upgrading overall effectiveness. Cotton is a great strength in Hubei Province's agriculture, and Hubei has made up its mind to launch a major effort to produce high yields of top quality cotton and use this cotton in multiple ways while keeping the growing area stable. In addition, full use is to be made of natural resources and a free hand given to development of oil-bearing crops and of other economically diversified crops, and vigorous efforts are to be made in developing animal husbandry and the aquatic products breeding industry, all of agriculture thereby developing in a steady, all-around and coordinated direction.

To render a good performance in the second step of rural reform and genuinely strengthen the foundation that is agriculture, this year Hubei Province will make an investment of 10 million yuan more than in 1985 for capital construction of farmland water conservancy and for improvement of agricultural production conditions. Loan funds for rural businesses, for promotion of rural techniques, for improvement of techniques and for agricultural production of a developmental nature will be increased by more than 550 million yuan more than in 1985. In addition, actions will be taken to readjust fixed procurement contracts for grain and cotton, to revive grain and cotton pre-purchase down payments, and to work on the building of a number of farming, animal husbandry and fishing industry commodity bases.

9432
CSO:4007/411

REVERSAL OF DECLINE OF FORESTRY RESOURCES URGED

Beijing ZHONGGUO LINYE [FORESTRY OF CHINA] in Chinese No 5, May 86 pp 33-35

[Article taken from the Ministry of Finance Agricultural Finance Department publication QINGKUANG FANYING [SITUATION REPORT] No 4, 13 Mar 86: "Survey Research on the Large Reduction in Forest Resources in Hunan Province"]

[Text] Hunan Province had forest reserves of about 300 million cubic meters shortly after the nation was founded. Recent extrapolations based on information from some regions give a current estimate of only 150 million cubic meters, so there has been a one-half reduction in forest reserves in Hunan over the past 30-plus years. Some primary timber-producing counties now basically have no timber to cut.

Although there are varied reasons for the decline in forest resources, the most important one is an inadequate understanding by some leaders concerning the importance of forestry. They have not been conscientious in their adherence to the principle of afforestation as the basis, which is manifested primarily in the following areas:

1. The survival rate in afforestation is low. From 1950 to 1985, Hunan Province afforested 134.38 million mu but only 45 million mu were actually preserved, a preservation rate of 33.5 percent.

2. Large amounts of forests have been destroyed. From 1950 to 1979, 39,887 forest fires broke out in Hunan and destroyed 8.67 million mu of forests, while 5 million mu of forests were cleared for reclamation, giving a total figure of 13.68 million mu, which is 34 percent of the preserved afforested area over the same period. There was a loss of about 40 million cubic meters of forest resources. In addition, insects damaged 82.08 million mu and caused losses of more than 15 million cubic meters of forest resources.

3. There are been rather serious disorganized cutting and denudation. Survey calculations made for Chenzhou Prefecture indicate that between 1953 and 1985, the prefecture raised 23.77 million cubic meters of timber and cut 45.04 million cubic meters, or 1.9-fold the amount grown.

4. There is little capital, and it is wasted. Hunan Province has spent 859 million yuan in capital for forestry, equal to expenses of 6.41 yuan per mu

when calculated according to afforested area. If calculated according to the area actually preserved, the figure still would be only 19.09 yuan per mu. In the past, about 50 yuan was spent to afforest 1 mu, but about 100 yuan is needed now. Obviously, money from state subsidies has been reduced somewhat. However, the money arranged by the state has not been used solely for the development of forestry and some has been diverted to other uses. From 1956 to 1984, the amount of money diverted in Chenzhou Prefecture was 15 percent of total expenditures on afforestation, which affected the development of afforestation activities.

The disastrous effects of declining forest resources are obvious.

1. Wasteland and barren land is increasing. Hunan Province now has 66 million mu of wasteland and barren land, equal to one-third of the land used for forestry. This not only has seriously affected ecological equilibrium in agriculture but also has affected the ecology and climate as a whole.

2. There are substantial difficulties in civilian firewood. The fuel of most peasants in Hunan is firewood, but the decline in forest resources over the past several years has made it rather hard for the peasants to obtain firewood. Some 76 percent of Hunan's 10.66 million peasant households have problems obtaining firewood.

3. There are inadequate sources of drinking water for people and animals in rural areas. Because of excessive reduction in the forest area and drop in the water table, more than 3,000 of the village people's groups out of the more than 510,000 natural village (people's groups) in Hunan have substantial problems with human and livestock drinking water.

4. There has been an obvious increase in the amount of silt in rivers and lakes. Excessive cutting in forests has caused serious destruction of vegetation in mountainous areas. One-fourth of Hunan's land suffers from serious water loss and soil erosion. The amount of silt entering Dongting Hu has reached 140 million tons a year and the lake bed is rising an average of 3.58 centimeters each year. This has reduced the area of the lake from its original 6,270 square km to 3,150 square km. The amount of silt in rivers also has increased substantially, and more than 1,000 km of river channels have been closed to navigation because of silt accumulation.

5. Drought on some land has eliminated harvests. The reduction in forest resources has led to serious drought in some areas. Hunan has lost harvests due to drought on an average of more than 2 million mu each year since the 1970's, and the figure shows a tendency toward increasing.

To accelerate development of forestry, we propose that:

A. We Must Adhere Strictly to the Principle of a Focus on Afforestation

We must work quickly to change the existing forestry management system that focuses on cutting and adhere strictly to the principle of focusing on afforestation. Afforestation and raising, cutting, and replacement of trees must be integrated and we must assure that the state, collectives, and individuals advance together. We must work to restore and develop forestry production and strive to restore the forest coverage rate to the level shortly after the nation was founded within 30 to 50 years to achieve perpetual afforestation of mountains and permanent utilization.

B. We Must Strive To Perfect Forestry Production Management System

The administrative management pattern used in forestry in Hunan now focuses primarily on state-run forests managed by the state, on collectively managed township-run forests, village-run forests and forestry stock companies, and on the "two hillsides" (responsibility hillsides, private hillsides) managed through contracts with the peasants. Of these forestry management patterns, the area in state-run forests managed by the state accounts for less than 10 percent, while collectively managed forests account for about 70 percent of the area and the "two hillsides" managed through contracts with the peasants account for about 20 percent. These administrative patterns are adapted to the actual situation in forestry in Hunan and should continue to be followed. Many peasants, however, are afraid of the many changes in forestry policies and they feel that "the only way to prosperity is to go into the mountains and cut trees," that "raising a large beam is not as good as a small rafter, and raising a small rafter is not as good as chopsticks," and that "getting more is not as good as getting less and getting less is not as good as getting it now." To understand this problem, we must make further perfections in forestry production management responsibility systems and make clear stipulations in the following areas: 1) With the exception of state-owned land used by state-run forests and forests in township-run forests that are under public ownership by the townships, village-run forests and forests in forestry stock companies and the "two hillsides" should be used public ownership by the village; 2) publicly owned forests in villages should be contracted to collectives and peasant households for management; 3) peasant households should have the right to pass on the trees they have planted on their afforested land; 4) peasant households should be allowed to plant, cut, and replace the afforested land around their homes.

C. Gradually Establish and Perfect a Forestry Pricing System

In the past, forests were considered natural resources, so calculations of their value were not made and China had no forestry pricing system. Although some afforestation fees were proposed, they came far from meeting replacement needs, which was a major factor that affected the restoration and development of forestry. To understand this problem, Comrade Zhang Pinghua [1728 1627 0553] began trying out a forestry pricing system while working in Hunan and the Hunan Provincial Government also stipulated clearly in 1985 that "forests should begin in 1985 to implement a forestry pricing system to guarantee the need for replacement and increase economic vitality." Forestry pricing standards were set rather low, however, at 22 yuan per cubic meter for unprocessed pine (logs), at 39 yuan for unprocessed China fir (logs), at 48 yuan for class 1 mixed unprocessed timber (logs) and at 28 yuan for class 2 mixed unprocessed timber (logs). If calculated at the current average of 2 cubic meters of timber per mu of regular forest, the value per mu of forest would range from 44 to 96 yuan and the average figure would be about 50 yuan per mu. In contrast, afforestation fees in state-run forests actually average about 100 yuan. To guarantee forest restoration and replacement, it has been proposed that timber prices in state-run forests be doubled gradually over the next 5 years to raise the average price per cubic meter of timber to around 50 yuan. At the same time, we should work in a planned and gradual manner to solve problems with timber prices for township and village forests and peasant household forests. This means that with the exception of current timber prices, the remainder also should be dealt with by comparison with timber prices for state-run forests. Because the costs of afforesting 1 mu of land in township and village forests and in peasant household forests is about 30 percent lower than in state-run forests, we propose that the timber price per cubic meter of timber in them be raised to about 35 yuan over the next 5 years.

D. Strive To Strengthen Management of Forestry Capital

The actual situation in Hunan Province is such that there is a definite difference between the various forestry funds that have been arranged and the requirements of forestry development. There are, however, quite a few funding channels at present, including such things as grants for capital construction in forestry, forestry activity fees, cooperative afforestation compensation fees, afforestation funds, timber prices, and retained profits by forestry enterprises, and so on. During distribution and utilization, however, there is a lack of unified arrangements, capital is rather decentralized, supervision and management are not carried out strictly, and economic results are low. To strengthen management of capital and improve economic results, we propose that under leadership by all levels of government, financial administration departments, forestry departments, and other related departments should organize forestry capital management groups for unified management of forestry capital. We should take action to intensify forestry and carry out serious survey research to propose optimum programs and adopt truly effective measures so that forestry capital is managed and used well to promote the restoration and development of forestry.

12539/9435
CSO: 4007/475

URGENT CIRCULAR URGES FIGHTING DROUGHT

HK060229 Changsha Hunan Provincial Service in Mandarin 2200 GMT 5 Sep 86

[Text] According to HUNAN RIBAO, the Provincial Party Committee and government issued an urgent circular on 3 September calling on the whole province to take urgent action to grasp the struggle against drought, overcome natural disasters, and strive for an all-round bumper harvest this year. The circular made the following points:

1. The leaders at all levels must fully understand the seriousness of the current drought, resolutely get rid of carelessness and the idea of trusting to luck, strengthen leadership, and mobilize the masses to use all means to fight the drought.

2. Strengthen the management of the use of water, set up management responsibility systems, and put them on a sound basis.

3. At present there is a shortage of diesel fuel. It is essential that priority in supplying the diesel fuel allocated for fighting drought be given to those areas where the drought is serious. We should not practice equal distribution. Other sectors should reduce their fuel consumption so as to support the struggle against drought. Places where the drought is particularly serious may use in advance 15 percent to 25 percent of their 4th quarter allocation of agricultural-use diesel fuel. The electric power departments must ensure sufficient power supply for fighting drought.

4. All departments and trades must vigorously support the struggle against drought and help to solve practical difficulties. They should provide assistance in manpower, finance, and material.

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CSO: 4007/17

PROBLEMS OF VEGETABLE PRODUCTION, SALES

Beijing JINGJIXUE ZHOUBAO in Chinese 1 Jun 86 p 6

[Article by Yuan Chi [5913 1716 of the Liaoning Province Commercial Department: "Some Problems in Vegetable Production and Sales Systems"]

[Text] I. The Area Planted in Vegetables Must Be Guaranteed

Differences should be made between near, middle and far suburbs. An area of land is the means of production for vegetables, but the utilization of land is subject to definite restrictions. It would be impossible without a specific land area to maintain vegetable production at a definite scale for a long period of time. There has been a gradual reduction in the area planted in vegetables in recent years, especially in the suburbs of cities. According for statistics on 10 Liaoning cities, there was a reduction of 227,000 mu in the land area planted in vegetables over a 5-year period. Shenyang City's suburbs dropped 666,000 square meters of vegetable fields in 3 years time. This trend certainly must be stopped and we should work gradually to develop enthusiasm for protection and reduce the income differential between vegetable planting and industry and sideline production. The second aspect is that it can reduce seasonal fluctuations and satisfy the demand of urban residents for out-of-season vegetables, and it can create "industrialized" vegetable production, which is especially important in the north. Maintaining a definite scale of vegetable production in the near suburbs should be the basis for focusing on staple vegetables to make up for inadequate vegetable production in the near suburbs.

II. We Must Strengthen Research, Extension, and Application in Scientific Vegetable Farming

Definite progress was made a few years ago in the area of scientific vegetable farming but vegetable production remains backward in this area. As production develops and living standards rise, there will be continued increases and changes in consumption demand for vegetables. This requires the growing not only vegetables with short growing seasons but also continual increases in the number of varieties. People should do intensive scientific research, extension, and application on cultivating, importing, and raising improved seeds, storing and processing vegetables, nonpolluting vegetable production, and so on. Larger amounts of agricultural investments should be made in these areas and financial subsidies for vegetables also should consider increased inputs in this area.

III. Gradually Form Definite Regionally Specialized Production

Vegetables are something that people need every day. Diversification of consumption levels and the effects on output of soil quality, production techniques, and production customs make it unrealistic to expect a single administrative region to be able to satisfy the multilayer and varied demands of residents, and doing so would not conform to the need for socialized production. Areas in Liaoning, such as Tieling Prefecture, which has a long history of producing green Chinese onions and garlic as well as the appropriate natural conditions, should move toward specialized production in a planned manner to meet consumption demand in the Tieling economic region. There are problems with specialized production in large areas as well as small ones, so all levels of government should use considerations of natural conditions as the basis for planned arrangement and implementation to move gradually onto the road of specialization in vegetable farming and for rapid development of industries, processing vegetables, and it would promote progress toward the "industrialization" of vegetable production.

IV. Develop the Social Shipping Industry On the Basis of Highways

All organs, enterprises and administrative units in Liaoning Province have a certain shipping capacity. Vegetable production has a strong seasonal quality and there are large spaces between the middle and far suburbs and consumption areas. A failure to solve the shipping problem inevitably would affect production and consumption, and the development of vegetable fields in middle and far suburbs especially requires a matching shipping industry. We should set up shipping companies or comprehensive shipping companies to serve agricultural production so we can solve the spatial contradictions between producing and consuming areas. This is essential for establishing large socialized markets.

V. Strengthen Technical Education for the Peasants, Guide Them Onto the Road of Commodity Production

The strongly technical quality of vegetable production means that specialized production places even higher demands on technology. Labor power has been decentralized since the implementation of production responsibility systems in rural areas and the contradiction in this area has become more acute. At present, however, many vegetable growers are poorly educated and still employ traditional production methods that are becoming increasingly ill-adapted if we use the perspective of commodity production. Many peasants failed to adapt to market demand after reforms in vegetable production and sales systems. They were apprehensive about markets and many are still accustomed to the unified purchases and guarenteed sales of the past. This requires that we start now to educate the peasants and strengthen guidance. Peasant Xu Daze [1776 1129 0463] of Dahan Village in Beiling Township, Shenyang City, assumed contractual responsibility for 425 mu of land, but he lost 60,000 yuan because of disorganized production and a lack of technical guidance. For this reason, we also should be concerned with education for employment in other industries and technical training, focus on education and training of the peasants as a primary factor of production, and raise their ability to produce and to adapt.

12539/9190
CSO: 4007/468

NINGXIA

BRIEFS

DESERT REGION SUCCESSFULLY CULTIVATED--Yinchuan, 9 September (XINHUA)--After three years of hard work, two peasants in China's northwestern Ningxia Hui autonomous region have turned 200 hectares of desert into an oasis. In 1983, Feng Wenxi and his wife pooled 120,000 yuan (about US$33,000) and contracted for 113 hectares of desert. Over the past three years by planting 427,000 trees, wheat and some vegetables on the land, he has reclaimed 20 hectares. This year he has 250 local people in his employ. Another family succeeded n making fences with 75 tons of wheat straw, and surrounded more than 86 hectares of desert to fix shifting sand dunes. The region has a rural population of 2.91 million. Since 1983, more than 40 percent of the total peasant population have been involved in this program, a regional official said, and they have reclaimed 30 percent of the desert in the region. [Text] [Beijing XINHUA in English 0722 GMT 9 Sep 86 OW] /12913

CSO: 4020/9

SHAANXI

MEETING DEMANDS ACTION AGAINST DROUGHT

HK060129 Xian Shaanxi Provincial Service in Mandarin 2330 GMT 5 Sep 86

[Excerpts] A provincial government meeting on 4 September heard reports on the serious drought in southern Shaanxi and the eastern part of the Guangzhong region and studied and made arrangements for antidrought and relief work. The government called on the rural areas throughout the province to take immediate action to fight drought, protect the autumn crops, ensure autumn sowing, and carry out relief work. All sectors, trades, and departments must provide vigorous support for the disaster and areas and strive for victory in antidrought and relief work.

Most parts of the province have suffered continuous drought for 170 or 180 days since last winter and spring. There were sustained high temperatures from early July to mid-August, when total rainfall in 65 counties was less than 30 millimeters, causing a great loss of soil moisture. The drought is particularly serious in areas north of the Wei and dry plains in Shangluo, Ankang, Hanzhong, and Weinan prefectures. This is the most serious drought in the province since 1972.

The provincial government demanded that the government at all levels, and especially the commissioner's offices of Shangluo, Ankang, Hanzhong, and Weinan prefectures, where the drought is particularly serious, and the relevant county and township governments regard relief through production as the central task from now on and extensively mobilize the masses to fight drought and carry out relief work.

The meeting demanded that proper arrangements be made for the production and daily life of the masses in the disaster areas, to ensure that no problems arise. Grain rations must be firmed up for each household.

In order to strengthen leadership over the work of fighting drought and carrying out ref relief work, the provincial government has set up a leadership group headed by Vice Governor Xu Shanlin.

/12913
CSO: 4007/17

READJUSTING OF RURAL PRODUCTION STRUCTURE DISCUSSED

Lhasa XIZANG RIBAO in Chinese 10 Jun 86 p 3

[Article by Wu Jianli [0702 0256 4409]: "A Discussion of Readjustments in Industrial Structures in Rural Areas in Xizang"]

[Text] Readjustments in industrial structures in rural areas are the second major step in continued economic reforms in agropastoral regions following the implementation of production responsibility systems. The living standards of the masses in Xizang are improving gradually and changes are occurring in consumption structures of farmers and pastoralists. This requires us to make readjustments in industrial structures in rural areas according to the needs of the masses.

Readjustments in industrial structures in rural areas in Xizang should adhere closely to the principle of "the primacy of animal husbandry production" in comprehensive development of animal husbandry, agriculture, forestry, sideline production, and fishery to establish rational industrial structures for comprehensive administration of animal husbandry, agriculture, industry and commerce and make major efforts to develop the commodity economy and work hard to speed up the pace of economic growth in Xizang.

This will require adherence to the following principles during readjustment of industrial structures:

1. Make readjustments in strict accordance with the principle of "the primacy of animal husbandry, integration of pastoralism with agriculture and forestry, adaptation to local conditions, economic diversification, and development of commodity production."

2. Matters should be handled on the basis of economic laws. Readjustments in industrial structures must be carried out according to the resources of each area and make use of local economic advantages. Readjustments should be carried out on the basis of market demand, and they should embody the principle of "no wealth without industry and no vitality without commerce" in developing secondary and tertiary industries. The development of processing industries for livestock, farm, forestry, sideline, and fishery products is an essential path to rural commercialization. We must transform the past situation in which agropastoral regions sold only low-value products and gradually form a series of industries, such as animal, farm, forestry,

sideline and fishery product production, processing, storage, packaging, sales, and so on, and develop comprehensive administration in agriculture, industry, and commerce.

Readjustments in industrial structures must be carried out on the basis of natural laws and conform to the principle of integrated animal husbandry, agriculture and forestry and play a positive role in restoring and maintaining ecological balance. We must make rational arrangements for the ratios between farmland, forests, and pasture, and we must establish ecological systems with benevolent cycles.

4. Readjustments in industrial structures in rural areas should increase the economic vitality of Xizang itself based on the need for the "two dominant factors" and achievement of the "two transitions."

Readjustments in industrial structures in rural areas are an urgent task as well as a long-term task, so we definitely must start with real conditions and handle matters according to objective laws. There must be careful planning, rational deployments, no hurried operations or rushed action, and we cannot merely engage in window dressing or falsification. The main thing is that economic results must be improved.

This will require guidance by categories, working with advantages and avoiding disadvantages.... I will discuss some of my views now regarding readjustments in industrial structures in agricultural regions, agropastoral regions, pastoral regions, forest regions, and small towns.

I. Agricultural Regions

There are 29 agricultural counties in Xizang with traditional advantages in the development of grain production. The problem is that animal husbandry and forestry usually are rather weak in these counties and animal husbandry production in some of the counties has shown a tendency toward stagnation and even decline. Although there have been rather substantial increases in industrial and sideline income, most of the counties depend on shipments and income for labor services. During readjustments in industrial structures in rural areas, these counties should continue to take advantage of their strength in grain production and produce more grain. This is the foundation for readjustments in industrial structures in rural areas. If we examine the traditional food structures of the people of Xizang and the comprehensive economic results of developing grain production in our region, we should combine no relaxation in grain production with appropriate development of cash crops. Agricultural production should be managed in an intensive manner and strive to raise yields to permit a major increase in the percentage of marketed grain on the basis of existing levels.

Second, there should be major efforts to develop breeding. Continued good work in animal husbandry in high mountain livestock farms in agricultural regions should be combined with expansion of the area planted in feed crops and making full use of crop stalks to develop breeding in agricultural regions and make simultaneous progress in cattle, sheep, pigs, and poultry in attempt at major improvements in the ratio between value of output in animal husbandry and animal husbandry income.

Third, we must continue for a long time to come to plant grass and trees for afforestation and improve forest coverage rates. Attention should be given to the development of timber forests, fuel forests, and shelter forests.

Areas suited to the development of economic forests should take a look at developing fruit trees.

Furthermore, we should develop secondary and tertiary industries and apply the principle of a dual focus on production and circulation for gradual establishment of rational industrial structures for comprehensive administration of animal husbandry, agriculture, industry and commerce. First of all, we must restore and develop all types of traditional rural handicrafts, develop processing industries that use animal, farm, forest, sideline, or fishery products as raw materials and organize construction crews focused on carpenters, masons, and bricklayers to develop the construction industry. At the same time, we should organize local labor and capital to develop shipping, commerce and services. We should organize to develop industries to process grain and oil and food products and arrange for local conversion of some of our grain. We should develop fishing, gathering, and small-scale mining on the basis of local resources, and we should provide active support to all types of specialized households, key households, and economic associations to develop household sideline industries. There should be definite growth in the scale of comprehensive administration of rural production, processing, shipping and sales within the next 3 to 5 years.

II. Agropastoral Regions

Xizang has 29 counties in agropastoral regions and they typically have integrated animal husbandry-agriculture-forestry economic structures. They contain about 30 percent of the livestock in Xizang. These counties generally have good pastures and climates suitable for development of animal husbandry.

Readjustments in industrial structures should stress the principle of the "primacy of animal husbandry" and develop "grass" into a single industry. The decision must be made to remove low-yield fields from cultivation for reversion to grassland, practicing grain rotation and planting feed and forage grasses to use agriculture to support animal husbandry. The quantity of animals should grow and their quality should be improved. Attention should be given to development of "pien niu" milk [from the offspring of a bull and a female yak] and other excellent dairy cattle. Areas suited to the development of Huanggai dairy cattle also should take action to develop them. We should make full use of the advantages of integrated animal husbandry and agriculture to develop beef cattle, sheep, and other commodity animals used for food, and we should develop seasonal animal raising and improve the percentage of market animal products. There should be a substantial increase in value of output and income in animal husbandry compared with present levels.

People's grain rations may be affected after a large amount of land is removed from cultivation and reverted to pastoralism, so the ability of these 29 counties to carry out simultaneous readjustments in this area will be determined by the ability of the masses to bear the economic burden and Xizang's ability to provide commodity grain. We should, therefore, consider implementation at different times in different groups.

Second, we should continue to make use of "microclimate" advantages in parts of some agropastoral counties. All of these counties are located in various microclimate zones suited to the planting of grain. Usually, the weather is mild in the microclimate regions and they have fertile land and sufficient organic fertilizer. We should continue to farm this land by planting improved varieties and apply modern means of agricultural S&T to raise yields, and the economic results certainly will be good.

Third, we should fully utilize economic structures that integrate animal husbandry, agriculture, and forestry and develop economic diversification. These areas are rather rich in wild resources and are suited to the development of gathering and hunting. In addition, we also should gradually establish industrial structures for comprehensive management of animal husbandry, sideline production, industry, and commerce and develop industries to process animal, forest, and sideline products.

III. Pastoral Regions

Xizang has 16 purely pastoral counties with more than 500 million mu of grasslands and more than 11 million head of livestock, more than 50 percent of the total for all of Xizang. Preliminary processing of breeding and animal products occupies 70 to 80 or more percent of the labor power in pastoral regions. The remainder is engaged in mining salt, dealing in salt and grain, handicraft weaving and spinning, tanning, gathering, and other household sideline industries.

First, we must acknowledge that grass is the foundation for development of animal husbandry and must be dealt with as the primary "industry." We must work well in management and construction of grasslands and grassy hillsides, eliminate rats and insects, implement grasslands responsibility systems, fix pasture-use rights, issue pasture-utilization licenses, and encourage pastoralists to establish grasslands. We also should advocate that individuals and household associations focus on pasture construction, establish pasture-management committees, implement fixed pastures for specific animals, readjust the contradiction between animals and grass, readjust livestock numbers, and readjust the ratio between large and small animals according to pasture conditions to make full use of the dominant animal varieties suited to local pasture conditions. Implement grasslands management methods that integrate administration and utilization and overcome the ideology which emphasizes animals to the neglect of grasslands.

Second, make additional readjustments in herd structures. Based on the serious imbalance in male/female livestock ratios in pastoral regions at present and declining pregnancy rates, we should make the appropriate readjustments in male/female ratios and increase the proportion of cows of suitable age. Breed and extend improved varieties of yaks and animals native to Xizang, select and breed local varieties, and improve the quality of livestock. In addition, we should continue to control the increase in the number of heads of livestock for a time to come and accelerate livestock turnaround, and we should raise total growth rates, slaughter rates and the percentage of marketed products and reduce deaths of mature livestock and raise the quality of animal products.

Third, establish small plants for processing feed. We should mix feeds according to scientific requirements and add vitamins, amino acids, growth hormones and other microcompounds to improve feed quality. Xizang is rich in fish resources and it has been estimated that 4 or 5 million jin of fish could be caught each year in its six largest lakes including Yangzhouyong Hu, Langcuo Hu, and others. Besides marketed supplies, they also could be used to develop fish-powder feeds. We must do good work in disease prevention and reduce livestock diseases and achieve control of pernicious contagious diseases.

In addition, we should gradually establish industrial structures for comprehensive administration of animal husbandry, industry, and commerce. Rely on and guide specialized households, key households, and economic associations in pastoral regions to set up industries for processing, such as fur washing, sorting, slaughtering, freezing, storage, processing of fur, skin, and meat, and so on. Develop specialized shipping households, specialized commercial households and specialized service households in pastoral regions to handle shipping and sales of animal products. We also should work for economic diversification. Pastoral regions have many lakes and ponds that can produce fish, salt, borax, and other resources, so new enterprises should be set up according to actual conditions.

IV. Forest Regions

Most of the forest regions in Xizang below elevations of 3,500 meters are engaged mainly in forestry, with some animal husbandry and agriculture. Most forest regions in areas more than 3,500 meters above sea level are engaged mainly in forestry with some animal husbandry. Monoculture and lethargic policies found in the past in forest regions have meant that the economic advantages of forest regions never have been utilized. For this reason, the first readjustment in industrial structures in forest regions should take place in a major effort to develop tea, apples, walnuts, Zanthoxylum bungeanum Maxim., peaches, pears, and cash trees.

Second, we should make full use of forest resources and cultivate the [edible fungus] Auricularia auricula-judae, huang'er [7806 5101--"yellow ear"], tremella [used in Chinese medicine], [the medicinal fungus] Ganoderma japonicum (Fr.), edible mushrooms and so on, and make full use of all types of wild animal and plant resources to develop Chinese and Xizang medicines.

Third, make full use of forestry advantages and strive to develop processing industries centered around forest and sideline products and establish an industrial structure for comprehensive administration of forestry, industry, and commerce. Focus on processing, packaging, shipping, and selling wood, bamboo, and sideline products.

Fourth, continue to maintain and protect existing state-owned forests and collective forests that are being managed well, encourage renewal of base areas and encourage household afforestation, with the trees belonging to those who planted them.

Fifth, increase comprehensive utilization of wood and bamboo and develop some of the corresponding forestry industry enterprises according to conditions.

V. Small Towns

Xizang does not have many towns, and most townships and towns are rather small, with the exception of towns like Lhasa, Xigaze, Qamdo, Zedang, Nagqu, Bayi, and Jiangzi. We should formulate economic development plans and town construction plans and speed up the construction necessary to transform small towns into commodity collection and distribution regions and make full use of the role of town markets to promote readjustments in industrial structures in rural areas. Readjustments in industrial structures in towns first of all should involve development of breeding, vegetables, and orchards according to market demand. Encourage peasants living in the suburbs to develop small-scale household breeding farms, vegetable gardens, and orchards. In addition, develop the feed industry and processing industries, such as storage, preservation, and so on for farm, animal, and aquatic products, and supply towns with larger amounts of milk, eggs, meat, vegetables, and fruit.

Next, develop all types of industries, repair industries, commerce, and all types of service industries.

All of Xizang's original towns had traditional nationality handicraft industries, and we should continue to develop the nationality handicraft industry advantages of towns like the Lhasa City region, Xigaze, Jiangzi, Zedang, Qamdo, Lhaze, and so on and of areas such as Zhanang and Gonghe to develop nationality handicraft products, such as pulu [a woolen fabric made in Xizang], carpets, Xizang knives, Xizang bowls, Xizang shoes, robes, and so on, and we should improve quality and technologies, increase the number of colors and varieties, lower costs and expand sales.

Third, develop construction crews and the construction materials industry and do good work in town construction. Set up popular commodity buildings and develop new industries.

VI. Border Counties

Xizang has almost 22 counties in border areas and 27 low-volume traditional trade fairs. Besides focusing on animal husbandry and making use of local resource advantages and economic advantages and readjusting industrial structures, these counties should also produce marketable livestock, farm, forest, sideline and fishery products, and handicraft products to satisfy demand in low-volume trade with neighboring countries and border people and improve the economic results of low-volume trade.

For Xizang as a whole, attention should be focused on readjustment and development of two major industries during the process of readjustments in industrial structures in rural areas.

The first is tourism. Lhasa, Xigaze, Shannan, and other areas should develop hotels, restaurants, communications and nationality handicraft product industries on the basis of the need to develop tourism throughout Xizang.

The second is mining. Xizang is rich in mineral resources. Many people throughout history have mined gold at Ali, Zangbei, and along the banks of the Jinsha Jiang. Attention should be given to restoring gold mining and use the advantage of panning by the masses. With a prerequisite of not destroying state resources, small coal mines, mica quarries, crystal mines, borax mines, aluminum and zinc mines, jade quarries and marble quarries should be established by those among the masses with mining ability, and the masses should be encouraged to mine marketable products. Moreover, we must teach the masses to implement decisions of the Xizang Autonomous Region Bureau of Minerals regarding administration of mineral resources.

Xizang's low level of economic development has caused a lack of skilled people, sluggish information, inconvenient communications, energy resource shortages, small markets, and impeded circulation channels. When making readjustments in industrial structures, we also should focus on the factors that restrict readjustments in inudstrial structuresat both the macro and micro levels and on the overall situation as well to each of its parts.

This demands our respect for knowledge, skills and developmental intelligence resources and imports of technology, the keys to good readjustments in industrial structures in rural areas in Xizang.

In addition, providing good information services is an important type of work for guiding improvements in economic results during industrial readjustments.

Third, pay attention to the role of markets. Productive capital is limited. Besides using various forms to organize the scattered funds of society, we also should achieve greater invigoration of rural credit and make rational use of capital.

In addition, we should shift more rural surplus labor power into secondary and tertiary industries and increase social wealth.

To summarize, readjustments in industrial structures in rural areas in Xizang are subject to major restrictions. Readjustments in primary industries are not difficult, but they are hard to make in secondary and tertiary industries. It is possible that some will lead and some will follow at the beginning and there may be substantial differences. It is possible that some will move faster than others. We must have a full estimate of the role of each of these factors.

Make additional improvements in understanding, improve working styles and be good leaders by example. Matters should be handled on the basis of natural and economic laws so that the rural economy gradually throws off the effects of the natural economy and establishes closer relationships with secondary and tertiary industries. Coordinate development and take the road of comprehensive administration of agriculture, industry and commerce to accelerate the rural transition from traditional agriculture to modern agriculture and use the steps involved in the transition from the natural economy to the commodity economy to increase the vitality of Xizang's economy.

In our work, we should use propaganda and education for "ideological dredging" and employ economic measures and information services for guidance. Provide guidance through the experiences of specialized households and key households in becoming prosperous. Mobilize cadres to go down into the townships and villages and meet with the masses and allow the masses to consciously and voluntarily make readjustments according to local conditions and market demand.

Finally, readjustments in industrial structures in rural areas should be made in conjunction with central work in agricultural and pastoral regions. They should be made in conjunction with additional improvements in household responsibility systems. They should be made in conjunction with S&T extension work in agricultural and pastoral regions. And they should be carried out in conjunction with good regional planning work in agricultural and pastoral regions.

Agriculture, animal husbandry, scientific research, commerce, shipping and other relevant departments should provide better social services for production before, during and after production in all industries in agricultural and pastoral regions. Improve service attitudes, improve the quality of services and support and promote readjustments in industrial structures in rural areas.

12539/12948
CSO: 4007/466

DROUGHT PROBLEMS IN ANIMAL HUSBANDRY NOTED

HK10329 Lhasa Xizang Regional Service in Mandarin 1130 GMT 31 Aug 86

[Excerpts] The regional government recently issued a circular on doing a good job in animal husbandry at present and next winter and spring, calling on all localities to counter the adverse impact of this year's drought by taking decisive steps and making plans as early as possible to do a good job in animal husbandry and reduce losses to the minimum.

The circular said: Drought has occurred throughout Xizang this summer. In places where the drought is serious, the available pasture grass is about two-thirds less than in a normal year. As a result livestock in most places are not sturdy and have little resistance. Young livestock are not growing well and the death rate is serious. In view of this, the leaders at all levels must attach great importance to the problems and take decisive and effective measures to rapidly organize forces for grasping animal husbandry at present and next winter and spring. The circular calls for the following tasks to be carried out:

1. The main points on short-term government work released in June and the meeting of prefectural commissions and mayors in July made arrangements for animal husbandry production and also put forward specific demands on it. All prefectures and cities must seriously check on the implementation of these instructions. It is particularly important to perceive the threat to next year's animal husbandry caused by the natural disasters, and make preparations as early as possible against possible trouble.

It is necessary to step up ideological and political work and strictly enforce discipline. We should provide spiritual encouragement and the necessary material rewards for those who have done well in fighting natural disasters in animal husbandry. Those who have neglected their duties, causing serious losses, must be dealt with severely.

2. Seriously make material preparations for protecting the livestock from natural disasters. All materials must be shipped to the frontline before the snow comes. A certain amount of fodder, fuel, grain, and equipment must be held in reserve.

3. Make full use of summer and autumn pastures and resolutely protect the spring pastures. It is necessary to make all-round plans regarding the pastures and firm up user rights.

4. Strengthen the work of preventing and curing livestock diseases.

5. Make rational arrangements for the winter slaughter of livestock, with the focus on animals that can hardly get through the winter and those unable to bear young.

6. Make proper arrangements for the masses' livelihood. The leaders at all levels must go to the frontline to make proper arrangements for the masses' livelihood next winter and spring.

/12913
CSO: 4007/17

DEVELOPMENT OF SUGAR INDUSTRY ADVANTAGEOUS

Kunmin YUNNAN RIBAO in Chinese 20 Jun 86 p 3

[Article by Li Zhongjun [2621 6988 0193] of the Yunnan Province Light Industry Department: "Continue to Use Our Advantages in the Cane Sugar Industry"]

[Text] Of Yunnan Province's 129 counties, there are 102 with tropical or subtropical climates with an area covering about 100,000 square km that is suitable for growing sugarcane. Moreover, the sugar content of Yunnan cane is higher than in some other regions, so there are formidable conditions for development of the sugar industry. Both economic and social results are high in cane sugar production, and it requires fewer investments, provides more output, and plays a large role in raising agricultural incomes, improving the lives of people in border regions, and increasing financial income.

World sugar output reached 97.95 million tons in 1985, an average of 20 kg of sugar per person. The per capita consumption level in Asia is 8.5 kg. Output in China cannot meet demand, however. China produced more than 4.3 million tons of sugar and imported about 2.3 million tons in 1985, for a per capita figure of 6.6 kg. The Seventh 5-Year Plan calls for sugar output in China to rise to 6 million tons by 1990, and although per capita amounts may rise slightly they still will be lower than the world average level. If we consider China as a whole, production of 20 million tons of sugar each year would not be excessive.

Yunnan cane sugar has excellent quality and there are vast markets in China and abroad. Yunnan shipped out more than 910,000 tons of sugar during the Sixth 5-Year Plan to Sichuan, Guizhou, Shaanxi, Gansu, Hubei, and other provinces If we calculate at current sugar-consumption levels in China, there still are rather substantial shortages of cane sugar in neighboring provinces and autonomous regions. If Yunnan's cane sugar output rose to 700,000 tons by 1990, the per capita levels in these provinces and region still would reach only about 6 kg. Moreover, only short distances must be covered to reach these provinces and regions, so shipping costs would be low and our sugar would be fairly competitive. There is great potential for cane sugar production in Yunnan at present, and we also can improve economic results and increase our ability to compete in the market. If we calculate at the 5-jin-per-person level, even the market in Yunnan is not saturated. If we consider consumption in international markets, it would not be excessive for Yunnan to produce 1 million tons of cane sugar by the end of this century and we could export it to earn foreign exchange.

Some comrades feel that the world market price for sugar is too low and imported sugar can be purchased cheaply, so importing sugar would be more economical than producing it. This understanding has a certain superficial quality. Low prices for sugar on international markets at any particular time are the result of the cyclical fluctuations of capitalism. The price of sugar reached $0.38 per pound during the petroleum crisis in 1980 and afterward many nations made great efforts to develop sugar and flood markets. The price of sugar plunged to $0.05 per pound (costs were $0.12 per pound) and some sugarmills were bankrupted and went out of business, so the price of sugar has begun to rise again in 1986. China has a population of 1 billion, and its sugar should be based on domestic production. Major risks are involved in relying on unstable foreign markets, and we cannot use large amounts of foreign exchange to import sugar. Much less, the cost of shipping, packaging, and refining the raw sugar that was imported in 1985 meant that the price was no less than 1,000 yuan per ton, which certainly cannot be considered economical. Development of the sugar industry should continue to be a major principle in expanding financial incomes in Yunnan Province.

12539/12851
CSO: 4007/464

DEVELOPMENT OF HIGH-YIELDING TEA PLANTATIONS URGED

Kunmin YUNNAN RIBAO in Chinese 20 Jun 86 p 3

[Article by Wang Shuwen [3769 2885 2429] of the Yunnan Province Tea Export Co. and Xiong Qinghua [3574 3237 5478] of the Yunnan Provincial Government Economics Research Center: "Develop Close-Planted, High-Yielding Tea Plantations"]

[Text] Tea is one of Yunnan's primary cash crops as well as a traditional export, including the world-famous "Dianhong" [Yunnan Red] and "Pu'er" teas. To accomplish Yunnan Province's overall strategic social and economic development goals and bring prosperity to the people as quickly as possible, we should utilize Yunnan tea's market advantages as fully as possible.

Our basic opinion is that prior to the year 2000, one aspect should be to focus on transformation of present low-yielding tea plantations and efforts to increase yields on the basis of current average yields of 51 jin per mu to more than 70 jin to attain China's national average level and fight to raise output to 1 to 1.2 million dan, mainly for sale within China. The second aspect is that we should employ definite amounts of finances, materials and manpower for concentrated construction of 1 million mu of close-planted, high-yielding tea plantations and strive for an output of 2 million dan, mainly for exporting to earn foreign exchange. With the increases in these two items, Yunnan Province's development goals for the year 2000 would be: 2.64 million mu in tea plantations, up 87 percent from the 1980 foundation, and output of more than 3 million dan, up 6.2 fold.

The key problem is the addition of 1 million mu of close-planted, high-yielding tea plantations on our existing foundation, mainly for export to earn foreign exchange. Preliminary estimates are that the addition of 1 mu in close-planted, high-yielding tea plantations requires 200 to 300 yuan in investments, giving a total of 300 million yuan (based on the high estimate) for 1 million mu. After 3 years, however, even if we calculate only on the basis of normal yields of 150 jin of trade tea per mu, this would mean an additional 1.5 million dan of tea with a value of output of 300 million yuan each year, about the same as the total investment. If exported and if we use a 90-percent processing rate for our calculations, this would be 1.35 million dan of tea leaves that would earn $190 million. If we use the current retained proportion for foreign exchange, Yunan could earn $100 million each, which is equal to Yunnan's total yearly exports. This would make a very large contribution to the four modernizations drive in Yunnan. If we achieve the goal of yearly tea output of 1.5 million dan, we could collect 157 million yuan in taxes and profits.

To guarantee the quality of tea, we propose that preference be given for locating the development of close-planted, high-yielding tea plantations in areas like Lincang, Baoshan, Dehong Dai-Jingpo Autonomous, Simao, Xishuangbanna Dai Autonomous, and Honghe Hani-Yi Autonomous prefectures.

12539/12851
CSO: 4007/464

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JPRS-CAG-86-038

6 NOVEMBER 1986

China Report

AGRICULTURE

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JPRS-CAG-86-038
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NATIONAL

'FRUITFUL RESULTS' OF WORLD FOOD PROGRAM REPORTED

HK030111 Beijing CHINA DAILY in English 3 Oct 86 p 1

[By staff reporter Liu Dizhong]

[Text] The World Food Programme (WFP) has achieved "fruitful results" in China through its food aid development projects across the country, a WFP delegation touring China has concluded.

The organization has grown into China's second largest outside source of assistance, behind the World Bank, within the United Nations system.

The total value of the WFP's commitment to China so far has reached $420 million for 37 development projects and two emergency projects. Of the country's 29 administrative regions, 23 have received assistance from the WFP since 1979.

The WFP food aid development projects in China have been carried out "very successfully and impressively," with obvious social and economic results, said Manfred Kulessa, WFP representative in Beijing, after a recent inspection tour of projects in Jiangsu, Anhui and Shandong provinces. "I think we could show that food can be a forceful and useful tool for development," he added.

Representatives from Argentina, Australia, Belgium, Canada, the Federal Republic of Germany, France, Japan, Sweden, the United States and other donor countries to the WFP also participated in the 10-day tour organized by the Ministry of Agriculture, Animal Husbandry and Fishery.

Regular WFP-assisted projects in China involve irrigation and land development, forestry, fishery and rural road construction as well as water-supply improvements. The projects aim to help grain production and improve the living standard of rural people in economically depressed areas and those areas still unable to feed themselves.

Three new projects are currently being processed for approval this year. The value of WFP input to these projects is expected to be nearly $60 million.

WFP aid consists primarily of wheat and other food commodities used as incentives for people to participate in self-help development activities.

To help smooth implementation of these projects, the Chinese Government has offered financial, technical and managerial support. Its total investment in WFP-assisted projects reached $585 million by the end of last year, making up 60 percent of the total.

Irrigation, drainage and other related land development activities represent a major component of the total WFP assistance programme to China. Ten projects in this field are in full swing in Gansu, Shaanxi, Qinghai, Hebei, Henan and Anhui provinces to help solve problems caused by soil erosion, salinity, land infertility and flooding.

In a project in Mengcheng, Guoyang and Suixi counties of Anhui Province, more than 17.9 million cubic metres of earthworks have been completed over the past two years in the clearance, construction and rehabilitation of rivers, canals and ditches.

Also, 567 new wells were dug, 620 existing ones equipped and 537 kilometres of electric power lines were erected.

As a result, 40,067 hectares of farmland, or 96.8 percent of the total in the project areas, have been protected from floods and waterlogging, and 59.1 percent of the cultivated land has been effectively irrigated. Last year, food production increased to 3.23 tons from 2.41 tons per hectare in 1983, or a rise of 33.7 percent.

With WFP assistance more than 5,250 hectares of sandy wasteland was afforested in the first phase of a project in Guangxian and Shenxian counties of Shandong Province over the past three years. All the 1.8 million fast-growing timber trees in the project areas are doing well and about 63,000 cubic metres of timber will be produced annually after 7 to 10 years. This will bring in an income of 14.5 million yuan (almost $4 million) every year to farmers there. Their average per capita income is expected to increase to about 160 yuan from the current 104 yuan.

The afforestation projects also promoted agricultural production and farm animal husbandry in the areas.

During the trip, the delegation declared itself satisfied with China's full and effective use of the assistance in the development projects.

On further cooperation with the WFP, Zhu Peirong, Director of the Foreign Affairs Department of the Ministry of Agriculture, Animal Husbandry and Fishery, told CHINA DAILY that priority will be given to such fields as transformation of grasslands, inland freshwater areas, wasteland and barren hills, water conservation, afforestation, improvement of rural roads and development of the dairy industry in and around urban areas.

Those provinces that had not received WFP assistance would be considered first for future development programmes, Zhu said.

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CSO: 4020/21

RENMIN RIBAO ON WORKING FOR GOOD HARVEST IN 1987

HK101458 Beijing RENMIN RIBAO in Chinese 8 Oct 86 p 2

[Commentator's article: "Exert Efforts This Year to Reap a Good Harvest Next Year"]

[Text] This year, through the efforts of many departments, in particular the hard work of the vast numbers of peasants, our country's grain production has ended the decline of output. Following a bumper summer harvest, the autumn harvest in most localities is also good. This is an excellent and very inspiring tendency. Nevertheless, to realize steady growth in grain production, reap a bumper harvest next year, and lay a foundation for attaining the two targets of securing an annual output of 900 billion jin of grain in 1990 and an annual output of 1,000 billion jin in 2000, there is still a lot of work for us to do.

Production of summer grain is a kind of work that takes more than 1 year. At present, as it is precisely the busy season to do the autumn sowing for next year's summer grain, millions of peasants are intensely engaging in the production activities. Summer grain is decisive in the grain production of a whole year, in particular in the main wheat-producing areas in north and northwest China. Doing a good job in the current autumn sowing is an important link in gathering a bountiful grain harvest next year.

Generally speaking, the autumn sowing work of this year is better than in the last 2 years. This is because, first, the leaders attach importance to it; second, the masses are very enthusiastic for it; and third, we started the work early and the progress is relatively rapid. However, we are also confronted with bigger difficulties than in those years. First, the drought is serious and affects many areas, presenting a direct threat to the sowing work and the winter crops. Second, due to a lack of agricultural materials and especially chemical fertilizers, the amounts of supplies are much smaller than in the previous years, thus restricting the progress of sowing and affecting the strengthening of our antidrought capability and the growth of crops. We should attach great importance to these unfavorable factors.

To resolve these issues, most importantly, the governments and CPC committees at all levels, in particular at the county level, should strengthen their leadership in agriculture. In recent years, we have freed ourselves from the exclusive concern about agriculture and entered into the vast world of comprehensively developing the rural economy. This is great progress and should be continued and carried forward. However, not to be "agriculture secretary" or "grain secretary" does not mean not to firmly grasp the agriculture and grain issues. At present the peasants have many production problems awaiting our resolution, and we should never forget our duties. Efforts should be made to actively provide various services before, during, and after the grain harvest and settle difficulties and remove apprehensions of the peasants. Only by conscientiously and meticulously grasping well the specific issues like production, materials supply, and so on can we possibly attain the target of sustained and steady growth of grain production next year.

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CSO: 4007/30

PRC MOVES TO DEAL WITH AGRICULTURAL PROBLEMS

HK280446 Hong Kong ZHONGGUO TONGXUN SHE in Chinese 1231 GMT 26 Sep 86

[Article by Shi Fu [4258 1133]: "Immediate Agricultural Problems and CPC Foresight"]

[Text] Hong Kong, 26 Sep (ZHONGGUO TONGXUN SHE)--The total agricultural output value in mainland China increased at an average rate of more than 10 percent each year between 1979 and 1985. In 1984, China's agriculture created an all-time record of producing 473.1 million tons of grain and 5.52 million tons of cotton.

However, last year's grain output decreased by 28.33 million tons, or 7 percent, from the level of 1984; and cotton output decreased by 1.36 million tons, or 33 percent. It is expected that grain output this year will be greater than that of last year, but still smaller than that in 1984; however, cotton output will still be below the level of last year. That is to say, since reaching the peak of output in 1984, mainland China's agricultural production has declined for 2 consecutive years. The enthusiasm for agricultural production aroused by the household contract responsibility system does not seem as high as before.

A survey made in Jurong county, Jiangsu Province, shows that there are mainly four reasons for the reduction in agricultural production: First, the quality of labor force engaged in farming has become poorer, with a large proportion of young and middle-aged peasants engaging in industry, commerce, and transport. Now, people still doing farm work are mainly old people, women, and children. They lack scientific and technical knowledge and farming experience. Second, most peasants do not want to continue to earn their living by farming. Statistics show that just 29 percent of peasants are willing to take farming as their main means of livelihood, and the remaining peasants only do farm work half-heartedly. Some peasants have even given up the farm land contracted to them and engaged in other trades. Third, soil quality has declined. Predatory farming operations are now rather common. The use of organic fertilizer has decreased sharply and many fertile fields have become poor. Fourth, investment in agriculture has decreased. Last year, as the prices of farming materials rose in general, peasants reduced their investments in farming by an average of 5.7 percent.

The CPC National Conference of Delegates in September 1985 issued a serious warning that "without developing agriculture, there will not be a stable national economy; without ensuring grain output, there will be a chaotic situation." This year, the authorities have reiterated that economic development must be based on a solid agricultural base and this is a long-term strategic principle, and have adopted the following measures:

First, increasing investment in agriculture. According to reports, in the period of the Seventh 5-Year Plan, investment in capital agricultural construction and expenditure for agriculture will increase by a substantial rate each year. Part of the taxes collected from the profits of township enterprises and from industrial and commercial business will be used to support agricultural production.

Second, enacting a law on the management of national land and formulating a general program for using land effectively. On the one hand, the law will prohibit people from abusing farm land; on the other, the program will encourage people to make full use of land and tap the productive potential of land in the whole country. According to the recently promulgated program, the whole country is to be divided into five major sections for grain production, cash crops production, forestry, animal husbandry, and aquatic production, and production bases will be set up. The grain production bases will include the Dongtinghu Plain, the Jianghan Plain, the Poyanghu Plain, the Chengdu Plain, the Jiangsu and Anhui area between the Chang Jiang and the Huai He, and the Songnen Plain and Sanjiang Plain in northeast China. These production bases will make full use of their favorable conditions and concentrate manpower, financial and material resources to develop grain production.

Third, making great efforts to assist agricultural production. The authorities have planned to build a number of large-scale chemical fertilizer plants to produce effective fertilizer which mixes nitrogenous, potash, and phosphate elements in appropriate proportions. More small hydropower stations and methane generating pits will be built in the countryside so as to ensure the supply of energy. Subsidies for the agricultural production materials will continue to be given to peasants, and prices of fertilizer will be lowered.

Fourth, spreading and popularizing agriculture technologies and science. For this purpose, a "Spark Plan" is now being carried out. This includes the establishment of 500 technical model units and the training of a large number of technical backbone elements for various rural areas so as to provide low-cost or free technical services for peasants.

The current problems in mainland China's agriculture are mainly caused by the lack of a foresight in the past. Now, the authorities have paid attention to some farsighted measures and plans. Although this is something like "mending the fold after some sheep have been lost," the remedial measures will certainly be effective in preventing greater losses in the future.

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CSO: 4007/30

LIAOWANG ON RURAL REFORMS, AGRICULTURE

HK250950 Hong Kong LIAOWANG Overseas Edition in Chinese No 33, 18 Aug 86
pp 3-5

[Article by Wu Xiang [0702 6272], deputy director of State Council Rural Development Research Center: "Rural Reforms and the Agricultural Problem"]

[Excerpts] In-Depth Reforms in the Rural Areas and the Commodity Economy

About this time last year, grain production declined. There was a decrease of more than 50 billion jin, which was quite a significant decrease, in grain output. However, the output of industrial crops and the peasants' income did not decrease with the decrease in grain output. In fact, they increased rather significantly. Our observation then was that a decrease in grain output does not imply the existence of a desperate situation in the rural areas.

What is the situation this year? Since the beginning of the second half of last year, we have been stressing anew the problem of grain and the need to pay close attention to grain production and to the foundation of agriculture. Regarding this, we have adopted a few measures this year. Summer harvests in most areas are better than last year. However, according to available information, there has not been a significant increase in the peasants' income and it has even decreased in many parts of the country. Although grain output this year could be higher than that of last year, it would not be easy to bring about an increase in income. This is an important feature of the current situation in the rural areas.

The situation that has emerged in the 2 years since we took our second step in carrying out the rural reforms tells us that the rural reforms and rural development require that two basic targets be fulfilled. The first is that each individual should receive 800 jin of grain. The amount of grain each of us receives should increase with the growth of the population. The amount of 800 jin of grain for each individual is an average figure which indicates that having solved the problems of food and clothing, we are in a position to provide basic condition for comprehensive economic development. This is why this figure must grow with the growth of the population. This implies that grain output must reach 900 billion jin or more by the turn of this century if each individual is to receive 800 jin of grain. The second target is that the peasants' income steadily increases so that it will come closer to that of urban dwellers. These two interrelated targets are of crucial importance to the development of the country's economy. Grain is the foundation of everything. One must be well fed before one can do anything. Ours is a big country with a population of 1 billion. If we cannot ensure an adequate grain supply and if our purpose of importing small amounts of grain is not to introduce variety but to sustain our existence, we will be in great trouble. Similarly, the problem of a steady increase in the peasants' income is not simply a problem of an increase in the income for each peasant. In addition to affecting the growth of the national economy, it means an important guarantee for the smooth development of the urban reforms. In order to ensure that the urban reforms will be smoothly carried out, it is necessary to make our rural economic policy stable, that is, to stabilize the domestic market. The country's 800 million peasants are both producers and consumers. Peasants with great purchasing power mean a most enviable market. Thus, we should ensure a steady increase in the output of grain, cotton, oil-bearing crops, and other major agricultural products. At the same time, we should make sure that there is a steady increase in the peasants' income. These two things are closely related to each other. We cannot afford to stress one at the expense of the other.

We took our first step in carrying out the rural reforms between 1979 and 1984. Now that the commune system has been replaced by the system of contracted responsibilities with payment linked to output and the practice of eating from the same big pot has been abandoned, the peasants can keep some initiative in their own hands. This means that we have aroused the people's enthusiasm for work. This is the most productive factor. The whole world acknowledges the success we have scored by taking the first step in carrying out the reforms. What to do next? We should make capital, technology, resources, manpower, and other important productive elements flow and most satisfactorily combine them anew. This means that we should readjust the rural production setup and develop commodity production in order to enable the rural economy to develop from a self-contained or semi-self-contained natural economy into a socialized and specialized commodity economy.

2. The Problems of Grain and Agriculture

We have felt the pressure of the grain problem for a long time. Over the past 20 years or so, there were ups and downs in grain production, and sometimes it even remained stagnant; from 1957 to 1977, there was an insignificant increase in grain output. However, the population grew rapidly. In 1978, the per capita grain ration was 16 jin less than in previous years. It is true that the system of state monopoly for the purchase and marketing of grain did play an important historical role in those years. However, it was just a last resort.

The rural reforms that have been carried out since the 3d Plenary Session of the 11th CPC Central Committee have transformed the peasants into commodity producers and grain into a commodity. Thanks to the changes in the systems, the peasants now have initiative in their own hands and there have been rapid and radical changes in our agricultural production. As a result of the rapid and sustained growth of agricultural production, we have been able to solve the problems of food and clothing. If the figure 100 billion is considered to be one step on a ladder, one can say that we have taken two steps in only 5 or 6 years. This is something exceeding the expectations of many and it has drawn world-wide attention.

In 1984, grain output was well over 800 billion jin. The increase in the output of the major agricultural products has made conditions favorable for taking the second step in the rural reforms and led to the problems of readjusting the production setup, of diverting manpower, and of discarding the system of state monopoly for the purchase and marketing of various products. In 1985, because of the greater variety of industrial crops, the bad weather, and the increase in the price of means of production, the peasants' enthusiasm for growing grain was affected in some parts of the country and grain output decreased. A considerable portion of the decrease was expected, even in the plans. However, the decrease in grain output in 1985 had an effect on people's views on the first step in the rural reforms. The different views on the decrease in grain output in 1985 were a reflection of the different views on the first step in the rural reforms. Our opinion is that one cannot evaluate the reforms simply by looking at the data. The great significance of the first step in the rural reforms lies in the fact that it has revitalized agriculture by putting an end to a rigid system and to the practice of eating from the same big pot. Now, our systems, characterized by both centralization and decentralization, are very flexible. This is a major success made possible by the reforms. We must also realize that economic data always show periodical fluctuations. If, without this basic knowledge, one simply thinks that an increase in output indicates that the reforms are successful after looking at the available data, what will one think after discovering that some figures have become smaller?

Thanks to the development of what they do in practice, people generally realize that the system of contracted responsibilities has brought about changes in the rural areas and in the country and facilitated the urban reforms. Why is the system of contracted responsibilities so powerful? The human factor is the most important of various productive factors. In the past, although we had chemical fertilizers and tractors, the peasants had a negative attitude. Thus, chemical fertilizers and tractors were either used rarely or not at all. After becoming enthusiastic for work, people can very effectively use those material production aids that have been accumulated.

However, there are still people who suggest that grain output will increase even if we do not invest much money in the rural areas. In the past few years, we did not pay too much attention to the input of the key elements of production with the result that there were quite serious irrigation, soil, and input problems. As a result of the abandonment of the system of state monopoly for the purchase and marketing of various products, grain prices did not go up with the increase in the prices of means of production and, in some well developed areas, the peasants were disinclined to produce grain. In other words, their enthusiasm for grain production was somewhat affected.

Since the beginning of last year, another view has been gaining currency. This view is that since whatever can be reformed in agriculture has been reformed, what remains to be seen is how much money the state will invest. This is another extreme view.

Regarding the problem of the peasants' declining enthusiasm for grain production in some parts of the country, we should make a realistic analysis of the specific circumstances. The peasants are still very enthusiastic about becoming rich. There is nothing unusual about a drop in their enthusiasm for grain production. Now, we are encouraging commodity production and grain production is not very profitable. Naturally, the peasants will do whatever is more profitable. Does this not precisely indicate that the peasants have a commercial sense?

One should be able to see that material input is good but not necessarily always effective. Effective material input is impossible if an economic structure that can ensure good results does not exist.

In addition to readjusting prices and preparing land, we should also pay close attention to introducing modern, advanced technology. In the past, we equated modernization with mechanization. Now, we have discovered that good strains, chemical fertilizers, and many types of advanced technology can contribute to the growth of agricultural production. Fundamentally, agriculture should be modernized. We should pay close attention to increasing grain output, to material input, to preparing land, to building irrigation works, and to introducing modern technology.

3. The Problem of Household Economy

The development of the rural commodity economy has led to changes in our ownership system. At present, various types of economies are coexisting side by side in the rural areas. With the exception of land, which is the most basic means of agricultural production, about half of the other fixed assets are privately owned by the peasants. About half of the peasants' income is derived from family business. Both ownership and management show variety and economic combines are formed in varied ways. More and more things are involved in the relationship between commodities and currency and are exchanged on the market. All this has contributed to the circulation and regrouping of the key elements of production. Generally speaking, there is now variation in the three things mentioned above in the rural areas.

Traditionally, the country's cities were responsible for industrial production and the rural areas for agricultural production. That was a dualistic structure characterized by the separation of the cities from the rural areas. Since the application of the system of contracted responsibilities with payment linked to output, many peasants have started their own industrial careers and the vigorous development of the township and town enterprises has spelt an end to the dualistic structure. These enterprises are rapidly becoming a very active force in the national economy. Their gross output value in 1985 was 230 billion yuan. The peasants should try to make themselves workers. If all its 800 million peasants are involved in food production, China will not have a future.

Macroeconomically, China's township and town enterprises have great strategic significance. We discussed this last year. I will not dwell on it here. In the next paragraphs, I will concentrate on the effects of family business on the diversion of manpower and, in particular, on the situation in Wenzhou.

Few areas on the coast are as poverty-stricken as Wenzhou. To be sure, given the mildland humid climatic conditions there, Wenzhou is also a land of fish and rice with rich mineral resources. People can also breed fish along the coast. However, there is not enough arable land in Wenzhou. Both southern Jiangsu and the Zhu Jiang Delta area have a large population but little land. There is only about a little more than 1 mu of land for each individual in these two areas. However, in Wenzhou's nine counties and two districts, there is a population of 6.2 million. There is only 4 fen of land for each individual. In the past, Wenzhou had little industry and the state did not invest much money in it. The state-owned factories and plants there were only medium or small enterprises.

However, Wenzhou has been developing rapidly over the past few years. According to many who have visited Wenzhou, it has the greatest number of households each with an annual income of 10,000 yuan, tens of thousands of yuan, or even 100,000 yuan. About one-third of the people living in Wenzhou have become rich. On the bases for the production and marketing of the 10 major special products, the per capita income is more than 1,000 yuan. There are about 6,000 households in Liushi. Of them, more than 1,200 are 10,000-yuan households, 600 are 30,000-yuan households, and several are 50,000-yuan households.

In the past, Wenzhou was a poverty-stricken area. Its people used to go to other parts of the country to do business, to fluff cotton, to be cobblers, works, and miners, and to do whatever they were capable of doing. The people there have a business tradition behind them.

What makes Wenzhou different from southern Jiangsu is that in the course of the development of its commodity economy, its household industry, not its township and town enterprises, plays a dominant role. Wenzhou has a rural population of more than 5 million. About 133,000 rural households and more than 400,000 employees are involved in household industry. In 1985, its gross output value was 1.136 billion yuan. There are also people employed in various commercial services, including the transportation, purchasing, and marketing services. Therefore, there are actually more people employed in household industry than the above number. More than 270,000 people and 100,000 purchasing specialized households are working away from their hometowns in Wenzhou. They remit much money back to their hometowns each year. They can develop production with this money. In addition, they also bring back much economic information.

Although other localities also develop household industry, however, none has established a specialized market as quickly as Wenzhou. But why? An important reason is that Wenzhou has 100,000 sales representatives. As competent workers in the commercial field, they are observant and alert. Whenever they see anything good, they sign contracts as quickly as possible. Markets and contracts are their main concerns. Thanks to their efforts, many marketable small commodities produced by Wenzhou have become best-selling commodities. These people enjoy great success and have established themselves in Wenzhou.

Thus, it can be seen that competent workers are a key factor in regrouping various key elements of production. China has much manpower and a huge amount of surplus labor, however, much of this surplus labor is unemployed. Wenzhou has been able to establish a specialized market simply because its competent workers are good at identifying marketable products. Competent workers, as a key element of production, are in short supply in the course of the development of our planned commodity economy. It is necessary to stress the role of competent workers. Competent workers are absolutely indispensable to the development of commodity production in ther rural areas. If we have neither capital nor technology, competent workers can bring them along. With competent workers, we can establish a market despite transportation and communication difficulties.

4. The Market Problem

Our socialist economy is a planned commodity economy. One objective of the current rural reforms is to introduce some regulatory market mechanisms that meet socialist requirements. Planned market regulation is an innovation concerning our rural economic structure. In the past, we stressed our planned economy and rejected commodity economies. At the most, we could only allow commodity production and exchange to develop within certain limits.

As a result of the application of the system of state monopoly for the purchase and marketing of various products, the country has a close, monopolistic circulation system. We were used to producing goods in accordance with the plans without taking demand into consideration. Now that we have opened up the market, we face the problem of how to regulate the interests of various parties in the market. This is a major problem. We can only try to gain experience by conducting experiments.

Now, it is necessary to conduct theoretical research and to sum up the masses' practical experience. The leaders should permit experimentation. It is inevitable that in such a backward country as ours, there will be many transient things in the course of the introduction of a commodity economy. Some people are worried that we are proceeding in the wrong direction by taking the capitalist road. Others do not have the courage to take the lead. They are worried that people may accuse them of taking an about turn. This is incorrect. We should permissively allow many things to coexist side by side. However, we should properly guide them. Our criterion is whether they are favorable for the circulation and regrouping of various key elements of production and the development of a planned commodity economy.

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CSO: 4007/25

URBAN RESIDENT'S FOOD EXPENDITURE INCREASES

HK011353 Beijing ZHONGGUO XINWEN SHE in Chinese 0321 GMT 30 Sep 86

[Text] Beijing, 30 Sep (ZHONGGUO XINWEN SHE)--The per-capita outlay of China's urban residents on food over the last few years has increased at an annual rate of 6.3 percent. Their per-capita outlay was registered as 179 yuan in 1978 and amounted to 390 yuan in 1985.

Putting aside the price rise factor, the increase in outlay indicates that their standard of living is rising. A look at the food consumed suggests that grain consumption has dropped and the consumption of nonstaple food such as meat, poultry, eggs, and marine products has risen by a large margin. The consumption of nonstaple food in 1985 increased by 60 percent over 1964.

Urban residents' clothing needs have changed from low to medium and high grades. Their per-capita outlay on clothing articles last year was 112 yuan, an increase of 66.3 percent over 4 years ago. The consumption of cotton fabric has dropped by a large margin, and a large increase has been registered in the consumption of woollen goods, silk, and ready-made clothes.

Apart from possessing the "old four articles" (bicycle, wrist watch, sewing machine, and radio), urban residents can now afford the "new five articles," that is, television sets, washing machines, recorders, cameras, and refrigerators. Over the last 4 years, the outlay of every 100 urban households on the "new five articles" has increased twofold.

A report in JINGJI RIBAO today says that urban housing conditions have gradually improved and that spiritual and cultural life has been further enriched. Last year, the per-capita outlay of urban residents on recreational articles was 55 yuan, an increase of 320 percent over 1978.

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CSO: 4007/24

HARNESSING YELLOW RIVER VITAL FOR DEVELOPMENT

OW170806 Beijing XINHUA in English 0639 GMT 17 Oct 86

["News Feature: Yellow River Becomes Vital Water Source"--XINHUA headline]

[Text] Jinan, 17 Oct (XINHUA)--The Yellow River, notorious for its catastrophic floods in the past, has become a vital source of water for northern China's people, agriculture and industry.

According to members of the Yellow River Conservation Committee, people in northern China use 48 percent of the river's annual flow -- about 27 trillion liters of water -- for drinking and production.

China's second longest river, the Yellow runs through seven provinces and two autonomous regions. Since the 1949 liberation, development projects have quintupled irrigation facilities to divert water to 4.67 million hectares of agricultural fields a year.

Before 1949, the river on average overran the dikes of its lower reaches twice every three years.

Because of fear of floods, people who lived in the lower reaches traditionally did not dare build sluice gates in the dikes.

But since liberation, they have built 72 sluice gates and culverts, 55 siphon projects and 68 pump stations on the river. They annually divert enough water to irrigate 1.67 million hectares.

Expanded irrigation facilities in western and northern Shandong province in east China have helped boost grain output from 5.9 million tons in 1978 to 9.56 million tons in 1985, and cotton output from 95,000 tons to 871,000 tons. Provincial authorities say expanded irrigation generates more than 400 million yuan (108 million U.S. dollars) a year in additional agricultural revenue.

At the same time, they say, more than 10 million people have come to depend on the river as a source of drinking water.

The Shengli oilfield in Shandong, China's second largest, alone uses nearly 2,000 liters of Yellow River water to extract one barrel of crude oil. Altogether, the oilfield used 300 billion liters of river water in 1985.

Since 1970, the city of Tianjin has diverted two trillion liters of water from the Yellow River to alleviate shortages.

According to committee members, by 2000 an estimated 33 trillion liters -- or 60 percent of the flow -- will be used for constructive purposes.

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CSO: 4020/19

EXPERTS INCREASE YIELD OF UPLAND CULTIVATED AREAS

OW150430 Beijing XINHUA in English 0241 GMT 15 Oct 86

[Text] Nanjing, 15 Oct (XINHUA)--China's cultivated uplands in tropical and subtropical areas have been improved to yield more for the increasing population.

Of China's 2.18 million hectares of land in the areas, 1.50 million hectares cannot be irrigated, covering 14 provinces and cities along in the Yangtze River, said professor Zhao Qiguo, director of the Nanjing-based soil research institute under the Chinese Academy of Sciences.

"But its experts have achieved something in improving the dry soil in the tropical and subtropical land, which is usually low-yield owing to the aridness and acidity," Zhao said.

Helped by experts, farmers in south China's Guangdong and Hunan provinces, western China's Sichuan province and east China's Zhejiang province, China's main fruit producers, have improved their land by spraying lime powder and using fertilizers with more boron and calcium, according to Zhao.

"As a result, the orange and plum harvests have increased by 30 percent over two years ago, and the quality of fruit has also improved," Zhao said.

The fields have also yielded more crops thanks to crop rotation with leguminous and grain crops, Zhao said.

Since 1980, about 3,000 soil experts in the tropical and subtropical areas have been conducting a general survey of the land, checking the quality and quantity of the land which produces 42.7 percent of China's grain and contains 45 percent of the nation's trees.

A soil expert, professor Stephen F Dowdle, ex-officer of the Food and Agricultural Organization of the United Nations, said that China has made effective efforts in the utilization of the dry land in the tropical and subtropical areas.

"This has offered valuable experience to other tropical and subtropical countries," he said while attending an international conference on the management and fertilization of upland soils held in Nanjing last month.

There are 1.6 billion hectares of farmland throughout the world, of which 92 percent are not irrigated.

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CSO: 4020/19

NONGMIN RIBAO ON HOUSEHOLD FARMING EFFICIENCY

HK270957 Beijing NONGMIN RIBAO in Chinese 9 Aug 86 p 1

[Commentator's article: "Do Not Set Economies of Scale Against Household Operation and Management"]

[Text] There is a need for the integration of economies of scale with household operation and management in the process of modernizing our country's agriculture, making agricultural production specialized, and producing more marketable agricultural products. It is also an important goal in our efforts to further improve the output contract responsibility system.

Since the structure of "triple ownership with production teams as basic units" was replaced with the dual structure based on the household output contract system, household operation has shown its marvellous efficiency. It has given full vigor and vitality to our agriculture, which was stagnant for a long time, and in a short period of a few years our agriculture has scored achievements that attract the world's attention. However, the output contract responsibility system still has a certain degree of egalitarianism in the aspect of utilizing land resources, although it corrects the egalitarian practice in the aspect of income distribution. In many areas, fields are contracted to households equally according to the number of people and are divided into too many small pieces. This will not achieve the good results of economies of scale. In the past 2 years, many people have been thinking about and exploring ways to solve the contradiction between household operation and economies of scale.

Some comrades may set economies of scale against household operation and regard them as incompatible with each other. So they hold that another economic structure should be established to gradually replace the current structure based on household operation. This is a one-sided viewpoint.

We should certainly ensure economies of scale, because they are favorable to the change from a self-supporting economy to a commodity economy and from a small-scale commodity economy to a large-scale commodity economy. According to surveys, at our present technological level, if each person in the countryside merely conducted farming on 1 mu of land, almost no farm products could be sold on the market; but if each person handled 6 mu of land, the rate of marketable agricultural products would increase to 80 percent. However, we can seek economies of scale by negating the economic structure based on household operation. Household operation is a form that the Chinese peasants are familiar with and accustomed to. It has the advantages of integrating producers and business operators and combining responsibilities with rights and interests. So it can better arouse the peasants' sense of responsibility, can promote intensive farming operations, and can accelerate the development of productive forces. At present, the potential of household operation is still far from being fully tapped. So we should not negate this form; instead, we should take measures to further develop and improve it and to overcome its defects. If household operation is negated under the excuse of ensuring economies of scale, we will very probably backtrack to the old path of "large-scale public ownership" under the system of the "people's communes" and repeat the mistakes we committed in the past.

Can we maintain the household operation form and achieve the results of economies of scale at the same time? Yes, we can do so. The key is that we should have a correct understanding of economies of scale. The process of modern agricultural development shows that the concept of economies of scale has changed along with technological progress and the specialization and socialization of production. According to the traditional viewpoint, economies of scale mainly depend on a large area of land being handled and on the use of machines so as to raise labor productivity, the rate of marketable products, and the rate of profits. From the modern point of view, economies of scale are mainly based on the appropriate combination of all production factors. Apart from the area of land, the quality of land, the technological level of the farming machines, the input of energy, the use of new technologies, and the management skills all affect economies of scale. Meanwhile, the local and current state of production specialization and socialization is also an important factor. Now, according to the tendency in agricultural production, the area of land is no longer the sole factor in economies of scale; instead, better economic results and higher economic efficiency must be achieved through increasing investment in a certain area of land rather than through expanding the area of land. Therefore, we should not hold the outdated viewpoint that "the bigger the better" and that "the bigger area of land represents the advanced, and the smaller area of land represents the backward," and treat household operation from this viewpoint. In fact, household operation can reach an appropriate scale and achieve rather high economic efficiency.

To sum up, the area of land, the technological level, and the state of specialization and socialization are all important factors that affect the results of economies of scale. Therefore, if we are trying to overcome the limitations of household operation and enable household operation to have the advantages of economies of scale, we should do something in the following three aspects: First, we should develop nonfarming industries in the countryside so as to shift part of the rural labor force out of the farming industry, and should encourage shifting more land into the hands of able farmers. Thus, households specializing in farming on a larger area of land and household farms will appear. Second, we should promote the extensive adoption of new technologies and quicken the pace of changing traditional agriculture to modern agriculture so as to turn household operation into new-type technology-intensive farming production. Third, we should develop specialization and socialization of our agricultural production by establishing a sound service system to provide peasants with both preproduction and postproduction services they need in their household operation. By doing a good job in these fields, we will be able to integrate economies of scale with household operation.

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CSO: 4007/23

FREE MARKETS SURPASS STATE MARKETS IN VEGETABLES

HK250238 Beijing CHINA DAILY in English 25 Aug 86 p 3

[Text] Free markets have replaced state-run shops to become the top retail supplier of vegetables in urban areas, ECONOMIC INFORMATION reported yesterday.

In the first half of this year, free markets in 70 cities sold 1.8 million tons of vegetables, surpassing retail sales of state-run green grocers by 42.5 percent.

According to a sample survey of free markets in 70 selected larger cities, the State Industrial and Commercial Administration estimated that free markets in urban areas earned 938 million yuan ($253 million).

The paper said state groceries have failed to compete with free markets mainly because of poor management. After the state lifted its monopoly on sales of farm produce in the first half of last year, state shops had difficulty finding sources of vegetables, while private vendors managed brisk business with vegetable farmers.

Farmers found they could sell their crops to the traders at more favourable negotiated prices and in more variable quantities.

Higher management costs was another handicap for state shops, which usually have to pay state business and transport taxes.

Meanwhile, according to CHINA COMMERCE NEWS, prices of grain on free markets have been rising since last September when the country reported a 25 million ton drop in grain production due to reduced acreage, natural disasters, crop diseases and pest infestations.

In the first half of this year, the per-kilo average price of grain was 0.74 yuan, 24 percent over the same period last year. Rice was selling for 0.75 yuan, a 22 percent increase; corn, 0.46 yuan, a 33 percent increase; and soybeans, 1 yuan, an 18 percent increase.

But prices of most other goods on free markets gradually stabilized. The prices of pork and eggs remained the same, while those of beef and mutton continued to rise.

According to a sample survey of 276 urban and rural markets around the country, the State Industrial and Commercial Administration estimated that the business volume of free markets reached about 5.1 billion yuan ($1.4 billion), a record increase of 52 percent over the same period last year.

Next to vegetables, the second most-transacted product was eggs at 159 million kilos, followed by pork at 225 million kilos; grain at 259 million kilos; and cooking oil at 6.72 million kilos.

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CSO: 4020/13

SCIENTISTS USE INSECT VIRUS FOR FOREST PESTS

OW282129 Beijing XINHUA in English 1540 GMT 28 Aug 86

[Text] Beijing, 28 Aug (XINHUA)--Scientists at the Shanghai Insect Research Institute have succeeded in using an insect virus to control forest pests along the gigantic shelterbelt known as the "Great Green Wall" that astrides northeast, north, and northwest China.

The new method, described as cheap and effective, may replace the old method of aerial spraying of pesticides which cause environmental pollution and kill beneficial organisms.

The research project was carried out by the Shanghai institute in cooperation with an experimental forest farm in Shuangliao County, Jilin Province, from 1980 to 1982, when the farm was infested by oriental and white satin moths.

Experiments over the past 3 years showed the application of the virus killed 90 percent of the insects within about a week's time at an appropriate temperature.

This is more efficient than insecticides, said Zhu Guokai, insect virus expert and director of the Shanghai Insect Research Institute. The virus is harmless to human beings, animals, and other useful insects, he said.

Over the past few years, the method has been applied to more than 4,700 hectares, he said.

The forest farm reported that the method had also saved 80 percent of the labor required by chemical methods and prevented a loss estimated at 3.13 million yuan.

The Shanghai institute is planning to mass-produce the virus to be applied in protecting the mammoth forest belt projects in the northern part of China.

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CSO: 4020/13

BRIEFS

AMPLE VEGETABLES IN URBAN AREAS--Beijing, 9 Oct (XINHUA)--With cabbage and other autumn vegetable crops healthy and plentiful, urban residents in north China will have ample supplies of vegetables this winter and next spring, officials from the Commerce Ministry predicted today. According to preliminary statistics, farmers planted autumn vegetables on nearly 84,000 hectares in Beijing, Tianjin and 47 other cities in the area this autumn--nine percent more than last year. According to contracts signed earlier this year, south China farmers will supply 420,000 tons of vegetables to north China's cities throughout the winter, 120,000 tons more than in 1985. State-owned stores in 32 of China's larger cities, including Beijing, Tianjin and Shanghai, sold 2.46 million tons of vegetables in the first eight months of this year, up 15 percent from the same period in 1985. [Text] [Beijing XINHUA in English 1725 GMT 9 Oct 86 OW] /12624

REPORTS ON AQUATIC PRODUCTION--Beijing, 10 Oct (XINHUA)--A new marketing technique allowing the buying and selling of China's aquatic products to be controlled by market prices has resulted in significant production increases. According to today's PEOPLE'S DAILY, China's aquatic products have continued to increase and reached 3.97 million tons by August, which is 670,000 tons more than the same period last year. Experts anticipate China, which produced six million tons of aquatic products in 1984 and seven million in 1985, will produce eight million tons by the end of this year. Aquatic products in fresh water cultivation have increased by 30 percent compared with last year, the paper said. As for sea water aquatic cultivation, China yielded 310,000 tons so far this year, 33,000 tons more than the same period last year, the paper reported. In marine fishery, China sent a fishing fleet to western Africa for the first time last year, and the fleet returned fully loaded. This year, China fishermen are ready to go to the Alaskan Bay and the Atlantic Ocean. [Text] [Beijing XINHUA in English 1505 GMT 10 Oct 86 OW] /12624

STATISTICAL BUREAU SEEKS COTTON EXPANSION--Beijing, 17 Oct (XINHUA)--The State Statistical Bureau has proposed that China expand the areas under cotton and slightly cut the sown acreage of grain crops, the ECONOMIC DAILY reported today. The bureau said that the country should increase its cotton-growing areas to five million hectares while keeping its grain areas at 110 million hectares. Meanwhile, efforts should continue to increase the per unit output of grain, the bureau suggested. Thanks to increasing grain area by 1.9 percent this year to 110.9 million hectares, the grain output this year is expected to increase by 7.5 million tons, bringing the annual total to 386.5 million tons. But the areas under cotton were cut from 5.14 million hectares to 4.41 million in 1985, and this might result in the cotton supply falling short of market demand. The bureau called for increases of five million hectares of cotton growing area while maintaining the area for grain crops at 110 million hectares next year. [Text] [Beijing XINHUA in English 0256 GMT 17 Oct 86 OW] /12624

AID PROJECTS PROVIDE FOOD, JOBS--Beijing, 15 Oct (XINHUA)--Fish ponds built with help from the World Food Program (WFP) began producing with an average output of 2,600 kilos of fish per hectare. The WFP began to help China construct five aquatic projects in 1983 with aid in the form of 280,000 tons of wheat, said an official from the Ministry of Agriculture, Animal Husbandry and Fisheries. Locations of the projects include Honghu lake in east China's Jiangsu province, the low-lands of Hangzhou Bay in east China's Zhejiang province, the low-lands of the Tianjin suburbs, and also, for sea-water cultivation, the Bohai Bay of east China's Shandong and Hebei provinces, according to the official. "After the completion of these projects," the official said, "The fish ponds can supply the market with another 30 million tons of fresh fish." In addition, the 4,000 hectares of land around the ponds and farms can be used to plant trees and other fodder crops. And the five projects provide permanent jobs to about 90,000 to 100,000 people and temporary jobs to another 30,000 or 40,000, the official said. The Chinese government sets much store by WFP and has done what it can do to guarantee the construction of the projects, the official said. [Text] [Beijing XINHUA in English 1609 GMT 15 Oct 86 OW] /12624

FEED EXPORTS--As of the end of July, the Shandong branch of the National Native Produce and Animal By-Products Import and Export Corporation had earned $45,540,000 U.S. in foreign exchange from feed exports. As of the end of July, the National Native Produce and Animal By-Products Import and Export Corporation had earned $285,000,000 U.S. from feed exports, surpassing the annual plan. Twenty of the corporation's 29 branchs have fulfilled the annual export plan. [Excerpts] [Beijing GUOJI SHANG BAO in Chinese 28 Aug 86 p 1]

CSO: 4007/27

TRANSPROVINCIAL AFFAIRS

FISHING RESOURCES EXHAUSTED OFF SOUTHEAST COAST

HK210651 Hong Kong ZHONGGUO TONGXUN SHE in Chinese 1219 GMT 19 Sep 86

[Report: "Economic Fish Resources in China's Donghai Seriously Strained"--ZHONGGUO TONGXUN SHE headline]

[Text] Shanghai, 19 Sep (ZHONGGUO TONGXUN SHE)--According to a conference held in Zhejiang's Zhoushan not long ago on fishing in the coming winter season, the fishery resources in Donghai [East China Sea] which traditionally had an economic value are becoming exhausted.

In the first half of this year, the total output of yellow croakers, small yellow croakers, and cuttlefish in Donghai, which are valuable, accounted for only 1.98 percent of the total offshore catch within the Donghai region. It was only half of the output in the first half of last year. However, the output of shrimp, crabs, and pomfrets increased rapidly. In the spring and summer fishery seasons this year, the output of shrimp, pomfrets, and cutlass fish accounted for 47 percent of the total fishery output in the Zhejiang fishing ground and the output of tralwed shrimp alone already exceeded the output of yellow croakers, small yellow croakers, and scuttlefish put together.

According to an analysis made by some experts, it is obvious that as a result of intensive fishing, several types of fish are being outnumbered and replaced by others. However, this replacement is a replacement of high-class fish by lower-class ones and this indicates that with a lower position on the food chain, the fish caught in the future will have a lower quality.

The present situation is a result of changes in natural conditions and of plunderous catching.

The responsible persons of the Shanghai Municipal Aquatic Products Administration and the Jiangsu, Zhejiang, and Fujian Provincial Aquatic Products Administrations, who attended this conference, called on the fishing grounds under their jurisdiction to strictly"implement the fishery law," which was put into effect on 1 July this year, and to properly protect offshore fishery resources.

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CSO: 4007/23

BRIEFS

SHAANXI, GANSU WHEAT VARIETIES--Beijing, 18 Sep (XINHUA)--Farmers in Shaanxi and Gansu provinces have grown two new varieties of wheat that have proven resistant to drought in tests on nearly 47,000 hectares. Called varieties "702" and "7125" by scientists, the new strains enabled farmers to more than double their harvest compared to 6 years ago, before test planting began. [Text] [Beijing XINHUA in English 1108 GMT 18 Sep 86 OW] /12858

LIVESTOCK INCREASE--Beijing, 10 October (XINHUA)--Xinjiang and Inner Mongolia Autonomous Regions, China's major pastoral areas, report an increase in livestock production this year. The ECONOMIC DAILY reports today that Xinjiang had 35.86 million heads come into fold between June last year to June this year, up 520,000 head or 1.48 percent over the previous year. The number of sheep and cattle available for sale in the region increased by 11.5 percent in the first half of this year as compared to the same period last year. The number of pigs that went to market was up 12.6 percent. The output of dairy products jumped 31 percent while the amount of wool sheared registered a 9 percent increase over the same period last year. According to the INNER MONGOLIA DAILY, a local newspaper, Inner Mongolia had 38.82 million breeding livestock, 462,000 more than last year. All these increases occurred despite a number of natural disasters last winter and spring. INNER MONGOLIA DAILY attributed the good results to scientific breeding, expansion of livestock-breeding in farming areas and rearrangement of livestock according to market needs. [Text] [Beijing XINHUA in English 0727 GMT 10 Oct 86 OW] /12858

CSO: 4020/21

ANHUI

BRIEFS

CREDIT COOPERATIVE FUNDS--As of the end of June, deposits in credit cooperatives in the province amounted to 2.268 billion yuan, a net increase of 256 million yuan in the first half of the year, and a more than 156 million yuan increase over the same period last year. Savings deposits were 1.7 billion yuan, an increase of more than 100 million yuan over the same period last year. The amount of loans recalled were 574 million yuan, accounting for 43.9 percent of the loans granted during the period, and the rate of recovery increased 24.7 percent over 1984. Because deposits increased rapidly, and more loans were recalled, the amount of loans the credit cooperatives borrowed from banks decreased 66 million yuan over the same period last year. Based on statistics, credit cooperatives in the province allocated 920 million yuan to support grain production, accounting for 70.2 percent of the amount allocated for agriculture. [Excerpts] [Beijing NONGCUN JINRONG [RURAL FINANCE] No 17, 1 Sep 86 p 30]

RURAL SAVINGS--As of the end of August, the amount of deposits in agricultural banks and credit cooperatives in Anhui was 3.977 billion yuan, of this amount, peasant savings were 2.228 billion yuan, an increase of 486 million yuan and 478 million yuan respectively over the end of last year. Peasant per capita savings were 50.11 yuan, a net increase of 10.75 yuan over the end of last year. [Excerpt] [Hefei ANHUI RIBAO in Chinese 20 Sep 86 p 1]

CSO: 4007/29

PROVINCE FACES SERIOUS SOIL EROSION

HK030405 Hong Kong ZHONGGUO XINWEN SHE in Chinese 0314 GMT 28 Aug 86

[Text] Fuzhou, 28 Aug (ZHONGGUO XINWEN SHE)--In Fujian Province, which used to be called "a vast land of magnificent mountains and rivers," the issue of soil erosion is becoming more and more serious. At present, the area of soil erosion covers 20.33 million mu, accounting for 11 percent of the total farmland in the province.

The denudation of forests is the main cause of the soil erosion. In addition, the building of terraced fields and stone pits and highway capital construction have also resulted in soil erosion over large areas. According to statistics, the area of soil erosion in Fujian Province has increased by 200 percent over the late 1950's. The number of counties suffering from serious soil erosion has increased from 22 in the 1960's to the present 47. On average, 80 million tons of soil in the province are eroded each year.

This serious soil erosion has had a series of bad consequences in Fujian Province, such as the imbalance of ecological equilibrium, the decrease of the quality of farmland, the obstruction of communications and transportation, and so on. At present, the sand content of rivers like the Jiulong Jiang, Jin Jiang, Min Jiang, and so on has increased by 100 percent to 200 percent over the 1950's, resulting in silt in the reservoirs, the rise of river beds, and frequent floods, and droughts affecting navigation.

On average, the Jiulong Jiang valley used to have only one flood in every 22 years. However, in the last 35 years, it had one flood every 3 and 1/2 years. More seriously, during the 6 years from 1981 to this year, it has already had five floods.

In northern Fujian which was seldom affected by flood or drought, there is now a phenomenon that "a flood can be formed by a single day's rainfall and a drought will occur with no rain for 3 days."

The issue of serious soil erosion is causing concern to the responsible departments in Fujian Province. In recent years, the province has adopted various measures like planting trees on mountains, afforestation, growing grasses, and so on, to reduce the soil erosion. Last year, the province grew nearly 200,000 mu of grasses. Moreover, it also checked the practices of building terraced fields and quarrying mountain stones, which affect the ecological equilibrium. It is learned that Fujian Province plans to convene an afforestation and water and soil conservation meeting for five rivers (the Ming Jiang, Jin Jiang, Jiulong Jiang, Ding Jiang, and Cai Jiang) in September to study the countermeasures for attaining water and soil conservation and afforesting the areas along these rivers.

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CSO: 4007/24

FUJIAN

BRIEFS

COUNTIES' IMPROVEMENT--Beijing, 11 Sep (XINHUA)--Eleven of the poorest counties in Fujian Province reported higher grain output, industrial output value, and local government revenues during the first 6 months of the year. Compared to the same period in 1985, grain output grew 3 percent to 13,100 tons, industrial output value was up 18.08 percent to 310.45 million yuan (U.S. $83.9 million), and revenues increased 16.21 percent to 52.52 million yuan (U.S. $14.2 million). [Text] [Beijing XINHUA in English 0751 GMT 11 Sep 86 OW] /9599

CSO: 4020/13

MORE LAND ALLOTTED FOR GRASS, LESS FOR GRAIN

OW270809 Beijing XINHUA in English 0601 GMT 27 Aug 86

[Text] Beijing, 27 Aug (XINHUA)--Gansu Province in northwest China has accelerated its agricultural development by scaling down unproductive efforts to grow grain and emphasizing grass for livestock.

Since the emphasis on developing grazing land began 3 years ago, according to provincial authorities, farmers there have planted grass on 933,000 hectares. In addition to supporting livestock, the grass has helped limit soil erosion on the western end of the arid Huangtu plateau, where Gansu is located.

"The move to grass allowed Gansu's agriculture to be in better harmony with the natural environment," the authorities said.

As a result, the output value of livestock farming in the province has risen 57 percent over the last 3 years to 880 million yuan (U.S. $238 million), and the annual grain harvest over the period rose 12 percent to 5.3 million tons, even though grain areas had been cut back by 666,000 hectares.

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CSO: 4020/13

CIRCULAR ON DROUGHT, AGRICULTURAL PRODUCTION

HK180207 Lanzhou Gansu Provincial Service in Mandarin 1100 GMT 17 Sep 86

[Text] The provincial government recently issued a circular urging all localities in the province to base their work on fighting drought and to firmly grasp agricultural production this autumn and winter.

Since mid-July, most areas in the province have had very little rainfall. The temperature was fairly high and the air was dry. All this was harmful to agricultural production. According to incomplete statistics, some 5.5 million mu in the province were hit by the drought. It is predicted that rainfall in the province during the next 2 months will be lower than that in the same period of previous years.

The circular demands that all localiites take immediate action and firmly grasp all tasks in agricultural production this autumn and winter, and focus on preventing and fighting drought.

The circular points out that in order to bring into full play the role of existing water conservation facilities in fighting drought and developing production this autumn, all localities, while grasping the building of key water conservation projects, must improve the management of existing water conservation facilities, put coordinated renovation into first place, resume the operation of previous water conservation facilities, and increase irrigation efficiency. In the meantime, all localities must continue to grasp autumn ploughing, tractor ploughing in particular, increase the ability of arable land to retain water and protect crops; seize the time before the first frost to launch a drive of farmland capital construction; and fulfill this year's task for [words indistinct] in quantity and quality.

The circular also demands that all relevant departments and production units closely cooperate with each other, try every means to secure the supply of various goods, and provide good service so as to meet the needs in agricultural production and strive for better results in agricultural production in the next year.

/9599
CSO: 4007/25

GANSU

BRIEFS

CROP ROTATION PROJECT--Lanzhou, 5 October (XINHUA)--After visiting an agricultural region along the west bank of the Yellow River in Gansu province this month, scientists from all over China agree that a crop rotation project has been successful. With the help of local scientists, peasants in northwestern Gansu province have planted 67,000 hectares of grass annually for the past three years. The grass planting project was organized by Lu Fuhai, an assistant research fellow working at Gansu Agricultural Academy, and 100 experts of agriculture and animal husbandry. By going to peasants' homes, experts taught them to make full use of land by planting fodder after wheat crops have been cut down. During the autumn months, heat and sunshine in the region are not enough to sustain another grain crop. And they have chosen grass breeds belonging to the pulse family, which can withstand frost and grow quickly. As a result, the peasants now enjoy two harvests a year, and the soil is fertilized by the pulse grass which supplies nitrogen. The peasants in this region now earn 30 million yuan (8.1 million U.S. dollars) by planting fodder every year. With the introduction of the new crop, profits from cattle raising will increase 10 times or more. At the same time, the local government and research institutions have opened training courses, attracting some 26,500 peasants to learn the technique of planting fodder. [Text] [Beijing XINHUA in English 0130 GMT 5 Oct 86 OW] /12858

CSO: 4020/21

GUANGDONG

BRIEFS

HAINAN COFFEE PRODUCTION BASES--Since the beginning of last year, the Hainan regional government has successively appropriated a special fund of 900,000 yuan to build two coffee production bases in the eastern and western parts. To carry out the plan for cultivating coffee on 200,000 mu throughout the region during the 7th 5-Year Plan, the Hainan administrative regional government decided to build two coffee production bases last year, one in the eastern part with Xinglong Huaqiao Farm and state-run farms in Wanning County as the main bodies, 30,000 mu in area; one in the western part with Chengmai and Lingao Counties and state-run farms as the main bodies, 60,000 mu in area. Last year, the regional government appropriated 450,000 yuan from the funds of the central authorities for supported underdeveloped places to build the Chengmai County coffee base. By the end of last month, the coffee area of the county had reached 70,000 mu. It is estimated that its coffee area may exceed 10,000 mu within this year. This year, the regional government has also decided to appropriate 350,000 yuan to Lingao County and 150,000 yuan to Wanning County to build coffee bases. [Summary] [Haikou Hainan Island Service in Mandarin 0400 GMT 16 Sep 86 HK] /9599

AGRICULTURAL STRUCTURAL REFORM--Guangdong has scored marked successes in agricultural economic structural reform. Production has recorded sustained and steady increases, the agricultural structure is becoming more rational, and peasant living standards have improved. Total agricultural output value last year was some 23 billion yuan, an increase of more than 60 percent over 1980. The average annual increase during the Sixth 5-Year Plan was 10.3 percent. Average rural per-capita incomes rose from 274 yuan in 1980 to 495 yuan in 1985, an increase of over 80 percent. During the Sixth 5-Year Plan, the province reduced its grain area by 16 percent, and switched this land to diversified undertakings. As a result of several years of readjustment, the province's agricultural economic structure has gradually become more rational. [Excerpts] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 29 Sep 86 HK] /12858

SUMMER GRAIN PROCUREMENT--Guangdong Province has overfulfilled its quota for the procurement of summer grain ordered. According to statistics from departments concerned, by 10 September, the amount of grain ordered and stored in granaries was 1,752,300 tons and the quota for storing summer grain in granaries was overfulfilled by 101.6 percent. [Summary] [Guangzhou Guangdong Provincial Service in Mandarin 0400 GMT 17 Sep 86 HK] /9599

HAINAN EXPORT BASES--From 1986 to 1988, the area sown to tea will be developed on 40,000 to 60,000 mu; the area sown to coffee will be developed on 40,8000 mu; the area sown to peppers will be developed on 60,000 to 80,000 mu. By 1990, these production bases will provide more than 10,000 tons of tea, 2,400 tons of coffee, and 10,000 tons of peppers for export. By 1990, the area sown to high quality early produce will be developed on 10,000 mu, and provide 10,000 tons of early produce for export. The area sown to cashews will be developed on 120,000 mu, and will provide 3,4000 tons of cashews for export by 1990; 1,000 mu will be developed for shrimp breeding. From 1986 to 1988, 120 million yuan will be invested in these production bases, and it is estimated that the annual foreign exchange earned from exports will be more than $36 million U.S. By 1990, it is estimated that the foreign exchange earned from exports will be $100 million U.S. [Excerpt] [Beijing GUOJI SHANGBAO in Chinese 1 Sep 86 p 1]

CSO: 4007/34

CIRCULAR ISSUED ON FIGHTING DROUGHT

HK030717 Nanning Guangxi Regional Service in Mandarin 1100 GMT 2 Oct 86

[Excerpts] The regional people's government recently issued an urgent circular urging all localities to fight drought and ensure an increase and bumper harvest in grain production.

The circular reads: Drought has become more and more serious in the region since August. Over 4 million mu of late rice in the region were hit by the drought, accounting for 24.7 percent of the total late rice-growing area. Fighting drought to reap a bumper harvest has now become one of the urgent tasks in the region's rural areas. The circular raises the following demands:

1. Leaders of government organs at all levels must swiftly organize cadres and dispatch them to the drought-stricken areas to mobilize the masses to participate in the antidrought struggle.

2. It is necessary to bring into full play the role of the existing water conservation facilities and to properly control water needed in fighting drought.

3. Power supply departments must properly arrange power supplies for industrial and agricultural production. While ensuring power supplies needed in fighting drought in rural areas, they must do their best to reduce the impact on industrial production.

4. It is necessary to mobilize and rely on the masses to solve the problem of funds needed for fighting drought. The state must give reasonable subsidies to poor areas and areas which have difficulty in raising funds for fighting drought. The regional people's government has decided to appropriate 3 million yuan from the region's financial revenue as a fund for fighting drought. All localities must properly distribute and use this fund and are not allowed to use it for other purposes.

5. All localities must make good preparations for winter sowing and treat winter growing as part of the season's grain production so as to make up the losses caused by the drought.

/12858
CSO: 4007/32

GUANGXI

BRIEFS

AGRICULTURE DEVELOPMENTS--The grain departments of all places in Guangxi Region have sent 3,120 cadres to the disaster areas and grassroots grain centers to mobilize the masses to crash-transplant late rice and to step up storing grain in granaries. At the end of July, Typhoon No 9 attacked the southern part of our region, causing serious floods. Two deputy directors of the regional grain bureau led some 20 cadres to the forefront to help the masses provide disaster relief. By 10 August, Nanning Prefecture had transplanted late rice on 1.13 million mu and stored some 10,000 tons of grain in granaries, fulfilling the contracts for grain ordered. The amount of grain stored was some 1,800 tons more than in the same period of last year. By 10 August, the whole region had reaped early rice on 16,598,000 mu, transplanted late rice on 12,448,000 mu, and stored in granaries some 275,000 tons of grain which was ordered by contract. [Summary] [Nanning Guangxi Regional Service in Mandarin 1000 GMT 21 Aug 86 HK] /9599

CSO: 4007/24

GUIZHOU MODIFIES USE OF AGRICULTURAL FUNDS

HK091544 Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 7 Oct 86

[Text] This year, financial departments of our province at various levels have made rational arrangements for agricultural funds, thus stimulating the development of the rural economy.

Compared with last year, there are four distinguishing features in this year's arrangements for agricultural funds.

1. Agricultural funds allotted by financial departments this year are 27.1 percent greater than last year.

2. Agricultural funds were mainly used to change the basic conditions of agricultural production.

3. Funds used to promote agro-scientific and technological advances and to develop township and town enterprises were increased.

4. A certain amount of funds was allotted to help poverty-striken counties develop projects involving a shorter construction cycle and yielding faster and better results.

By the end of August, our province had used this year's agricultural funds to build 100 production projects in 26 counties. When completed, these projects will add a total of 116 million yuan to the province's industrial output value every year.

/12624
CSO: 4007/30

GUIZHOU

AGRICULTURAL CONFERENCE ENDS

HK280651 Guiyang Guizhou Provincial Service in Mandarin 2200 GMT 26 Aug 86

[Text] The provincial conference on agriculture concluded in Guiyang on 26 August. In accordance with the guiding ideology of making arrangements for agricultural production [words indistinct], the conference made arrangements for autumn sowing and winter water conservation work and extensively studied and discussed the problems of penetratingly carrying out rural reform, strengthening the foundation for agriculture, and speeding up the development of agricultural production.

The provincial CPC Committee and provincial government demanded that a new breakthrough be made in grain production in our province next year and commence with autumn sowing this year. It is necessary to suitably enlarge the autumn sown areas this year, to increase the per mu yield, and to strive to make output reach or surpass the highest level on record. The area planned for autumn sowing is 16.5 million mu, 6.6 percent larger than last year. To fulfill the quota for sowing, all places must strive to create conditions, to reduce the areas of [words indistinct] fields, and to [words indistinct]. Agricultural departments must give technological guidance. Commercial and supply and marketing departments must do well in supplying materials for agricultural use, including chemical fertilizers and agricultural chemicals, so that autumn sowing this year can be done well.

The conference also made arrangements for water conservation work this winter and next spring. The whole province has planned to increase the irrigated areas by 300,000 mu this winter and next spring and strived to complete this plan within 100 days. At the same time, all prefectures must organize regular construction forces to step up the construction of key projects and complete water conservation construction tasks.

Attending the conference were responsible persons of all prefectures, autonomous prefectures, and cities who are in charge of agriculture, leaders of agricultural departments, and responsible persons of the provincial departments and bureaus concerned. Provincial CPC Committee Secretary Hu Jintao, provincial Rural Work Department Director Qiao Xueheng, and provincial People's Congress Standing Committee Chairman Zhang Yuhuan attended and spoke at the conference.

/9599
CSO: 4007/24

WFP ASSISTS SOIL SALINIZATION PROJECT

OW271249 Beijing XINHUA in English 1200 GMT 27 Aug 86

[Text] Shijiazhuang, 27 Aug (XINHUA)--A project to control soil salinization in Hebei Province with assistance from the World Food Program (WFP) has been completed and hailed as a model for other countries by resident officials from the WFP in Beijing, according to the provincial agricultural department.

The province's Guzhou and Nanpi counties have long suffered from drought, waterlogging, and soil salinization. In 1982, the average grain output per hectare in the counties was just about 1,785 kilograms, and the per capita income was far below the national average.

In 1983, the program provided assistance to build irrigation and drainage systems in the counties to control soil salinization.

With the assistance, the people in the area, which covers 238 villages, have opened up and improved 5,800 hectares of salinized land and basically controlled waterlogged farmland in the past 3 years.

Last year, the per hectare grain output reached 3,218 kilograms, and cotton, 670 kilograms, as against 300 kilograms 3 years ago.

And the average annual income per capita soared to 303 yuan, four times the figure in 1982.

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CSO: 4020/13

HEBEI

BRIEFS

FOOD EXPORTS--As of the end of August, the Hebei Cereal, Oils, and Food Corporation had earned more than $162 million U.S. from exports, accounting for 107 percent of the corporation's annual plan for exports, and a 106 percent increase over the same period last year. [Excerpt] [Shijiazhuang HEBEI RIBAO in Chinese 20 Sep 86 p 1]

CSO: 4007/29

HEILONGJIANG

BRIEFS

WHEAT HARVEST--Beijing, 19 Sep (XINHUA)--State farms in northeast China's Heilongjiang Province harvested 1.75 million tons of spring wheat this year, 14.7 percent more than last year, according to the provincial government today. Spring wheat is the leading crop in Heilongjiang Province. [Text] [Beijing XINHUA in English 1037 GMT 19 Sep 86 OW] /9599

HEILONGJIANG GRAIN HARVEST--Harbin, 7 Oct (XINHUA)--Heilongjiang Province, one of China's leading grain producers, reports a good harvest on its 5.3 million hectares of farmland this year. A provincial official in charge of agriculture said here today that total train output in the province this year is expected to reach 16.8 billion kilograms, up 2.8 billion kilograms over last year and exceeding that of 1984. Last year Heilongjiang was hit by immense floods making farm production and daily life difficult for the peasants this year. While mobilizing peasants to fight the natural disaster, local governments have reorganized the farm production structure, expanded areas sown with improved grain seeds and introduced advanced cultivation techniques to boost farm production. [Text] [Beijing XINHUA in English 0836 GMT 7 Oct 86 OW] /12624

CSO: 4020/19

HENAN

COMMENTARY ON SUCCESS IN WHEAT GROWING

HK090817 Zhengzhou Henan Provincial Service in Mandarin 2300 GMT 6 Oct 86

[Station Commentary: "We Should Try Every Means for Doing Well in Wheat Growing"]

[Text] The province's work of sowing wheat seedlings has just started from north to south, and the task of doing well in wheat growing has become an important one for all people across the province.

This year, we face quite a lot of problems concerning wheat growing. Because of protracted drought, the income of many localities; peasants was dropped. Some of them even face financial difficulties. Thus, the supply of materials for growing wheat is difficult to guarantee. Most counties and cities in western and northern parts of the province are still suffering from protracted drought.

At present, some 16 million mu of farmlands are needed to be taken the drought-relief measures in order to grow wheat. If there is no heavy rainfall in October, the area of farmland affected by drought will be further increased. Some localities also face shortage in fuel and chemical fertilizer. This will also directly affect our work of wheat growing.

To overcome difficulties and solve problems in our correct attitude that should be established. The provincial party committee and government urged the leadership at all levels to understand in a sober-minded and thorough way the importance of the work of doing well in wheat growing.

It is just as the common saying goes: if a man delays the land for a while, the land will delay man for a whole year. All comrades in charge of the rural work should actively take actions. Going to the masses and the forefront of wheat growing, they should solve problems for the people in a down-to-earth manner, so as to do well in the work and promote a healthy development of the rural economic work.

/12624
CSO: 4007/30

HUBEI

CALLS FOR IMPROVING WATER CONSERVATION

HK230556 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 21 Sep 86

[Station "short" commentary: "Water Conservancy Projects Must Be Built, the Methods Must be Reformed"]

[Excerpts] Since the founding of the PRC, the province has built a number of water conservation projects with stress on preventing floods, draining water from flooded fields, and irrigation, and a large number of basic farmland and small water conservancy facilities. This plays an important role in ensuring the safety of the property and lives of the people, in increasing the province's ability to resist floods and drought, in promoting social and economic development, and in improving ecological environment of agricultural production.

One of the main reasons for the province's rapid agricultural development during the 6th 5-Year Plan is that these water conservancy projects yielded great results with the assistance of the party's good policies and the progress in science.

In recent years, however, the province has invested less money in farmland and water conservancy capital construction. Some water conservancy projects have long been out of repair and the equipment has aged. Due to sabotage from the outside, some water conservancy projects suffer serious leakage problems. The construction of new projects is proceeding slowly. Consequently, the economic results yielded by water conservancy projects have become poorer with each passing year. With the reduction of the (words indistinct), water conservancy work now cannot meet the needs of agricultural development.

Water conservancy is the lifeblood of agriculture and the national economy. To push the province's agricultural production to a new level, we need not only stable policies and scientific and technological advancement, but also the building of water conservancy projects on a large scale.

Resuming our efforts and rallying our forces does not mean simple repetition of the past acts. Water conservancy projects must be developed, and the methods must be reformed. It is necessary to fully affirm out achievements and experience in previous water conservancy construction. The achievements and experience must be carried forward and developed. As for some failures and setbacks in the past, we must learn from them and turn them into valuable experience. Only thus, can we remain sober minded under the new situation and regain our strength quickly; can we fight more heroically, exercise more effective leadership over water conservancy work; and can we work more solidly.

Diligent implementation of water conservancy policies can unleash the initiative of peasants for developing such projects. The scale of water conservancy projects must correspond with the peasants' ability. Water conservancy departments must improve their service so that peasants can gain further benefits from developing water conservation.

/9599
CSO: 4007/23

STATE, HOUSEHOLD FARMS DEVELOP AGRICULTURE

HK030945 Wuhan Hubei Provincial Service in Mandarin 1100 GMT 2 Oct 86

[Excerpts] The province's state-run farms closely integrate the economic advantages of large farms with the initiative of household farms, thereby forming a double-layer operation system and promoting the development of agricultural economy.

In 1985, the gross industrial and agricultural output value of the province's agriculture increased 26 percent over that in 1984. Likewise, this year's output of summer grain and oils increased 8.6 and 67 percent over the same period last year.

In order to conform to the operation of household farms, the province's state-run farms have switched their operation pattern from that of issuing administrative instructions to that of offering operational services. They cut the number of organs, sections, and offices but established service, aquatic products, and farming companies and commercial service networks. At present, the province's 49 state-run farms have established service systems for cultivating improved breeds, plant protection, technology promotion, agricultural machinery, and material supply.

Furthermore, the state-run farms focus on core industries, and lead the production of household farms onto the track of farm processing and production according to market demand. They coordinate a whole process including the production of raw materials, processing, and sales. Through processing, which increases the value of products, and exchange of commodities, the large farms earn their profits while the household farms increase their income through the production of raw materials.

/12858
CSO: 4007/32

RENMIN RIBAO ON HUNAN RESTRICTING HOG EXPORTS

HK080933 Beijing RENMIN RIBAO in Chinese 4 Oct 86 p 2

[Newsletter by RENMIN RIBAO reporter He Jiazheng [0149 0302 2973]: "Between Relaxation and Imposition of Restrictions -- Investigation of and Thoughts on the Questions of Hogs in Hunan"]

[Excerpts] The news that Hunan imposed restrictions on hogs leaving the province has been the talk of the town since 1985. The imposition of restrictions and relaxation ran counter to each other. The direct results of restrictions were obstruction of the circulation channel and the loss of markets in other provinces, with the enthusiasm of the peasants in raising hogs eventually dampened. The "difficulties in marketing hogs" that emerged in Hunan for a time serves as evidence. But would it help the matter much if such a policy were censured in an oversimplified way?

The reporter recently had a chance to investigate the hog problem in Hunan with comrades of relevant departments.

The stability of the market relied chiefly on price relaxation, which has stimulated production as well as the peasants' enthusiasm and the universal increase of the number of hogs raised. Based on the investigation by relevant departments of 3,700 households in 37 counties at that time, the number of hogs raised in the 1st quarter of the year was 12,500, up 22.1 percent over the same period of the previous year, with each household raising an average of 3.4 hogs. The peasants specialized in raising hogs were very happy.

In early June, "a short supply of pork" suddenly emerged throughout the province. Pork prices shot up and changed almost daily in Changsha, increasing by one jiao every day consecutively for days, and it was two yuan for half a kilogram around the Dragon Boat Festival. Why did pork prices shoot up when there were more hogs? We will begin with Hunan's close neighbor Guangdong. Opening up to the outside world and economic development caused a drastic drop in the relative interest of Guangdong peasants in raising hogs. Many peasants transferred to other trades for higher income. Before the policy of relaxation was implemented, pork from other provinces was allocated and transferred to Guangdong by the state, but since the implementation of relaxation, Guangdong had to look for its own sources of pork supply, and its attention was focused on Hunan, which was nearest to Guangdong, raised a great number of hogs, and transportation cost less. Thus, an upsurge of vying for hogs in great numbers at high prices started. Those doing other business went in for the hog business, and even those engaged in farming sought partnership in the hog business. For a time, the hog business became the most popular of all trades.

Statistics of the Yichang livestock and poultry quarantine station under Binzhou Prefecture neighboring Guangdong show that in 1985, 1.39 million hogs left this quarantine station for Guangdong, and the number was 240,000 in May alone. The large number of hogs leaving the province caused skyrocketing pork prices throughout the province. Urban citizens complained: "We are paying Guangdong prices for pork produced in Hunan."

The pressure of the market made people lacking experiences in relaxation helpless. Obviously, they had two ways out: One was to subsidize the consumers with money; the other was to prohibit hogs from leaving the province. The former would involve local financial interests, not to mention the lack of funds to do so; moreover, nobody was willing to pay for pork which others would enjoy. The latter was the easiest and simplest. Therefore, the relevant department decided to prohibit hogs leaving the province. This measure was soon criticized by relevant departments of the central authorities, and met with the censure of the peasants. The method of imposing restrictions did not work. So in July 1985, they adopted a new measure -- charging fees for hog breeding. For every hog sold to provinces other than Hunan, a breeding fee between 20 and 30 yuan was charged, and no hog would be permitted to leave the province without a receipt for the charge. This was in essence still imposing restrictions. The measure was implemented until January 1986. As a result, the number of hogs leaving the province dropped with each passing day. The number of hogs leaving the Yichang quarantine station was only 20,000 between August and September 1985, and the number dropped further to 10,000 between October and November.

With the imposition of restrictions, Hunan's pork market stabilized. But soon, unpredictable (in fact, predictable) instability emerged. Hunan's imposition of restrictions compelled Guangdong to seek new sources of hogs. Hogs and deep-frozen pork from Sichuan, Henan, and Jiangsu entered the Guangdong market in huge quantities. The situation of Guangdong relying on Hunan changed. The Hunan peasants' difficulties in selling their hogs have become conspicuous with each passing day because the number of hogs raised went up by a large margin, and now they have lost such a big market as Guangdong.

Only when we seriously ponder such a series of problems will we find that we are facing the task of reorganizing the market. This is rather complicated work. We must adhere to the premise of "relaxation," but we must work hard to set up a new economic operative order in the course of relaxation. The latter is more difficult than the former, and a process of exploration is necessary.

/12624
CSO: 4007/30

HUNAN

BRIEFS

RICE OUTPUT--Based on statistics of the provincial grain and oil bureau for the beginning of September, 7,160,000 mu have been sown to semilate rice, and per mu yield surpassed 380 kilograms. Gross output may reach 2.71 billion kilograms, a more than 10 percent increase over last year. Based on statistics, 4,830,000 mu have been sown to hybrid rice, and the average per mu yield was 440 kilograms, 60 kilograms more than ordinary rice. [Excerpt] [Changsha HUNAN RIBAO in Chinese 10 Sep 86 p 1]

CSO: 4007/29

COMMENTARY URGES IN-DEPTH RURAL REFORM

OW161004 Nanjing Jiangsu Provincial Service in Mandarin 2200 GMT 12 Sep 86

[Station commentary: "Deepen the Reform, Increase the Vigor"]

[Excerpts] In light of the central authorities' decision to lay the foundation for a new economic system and enable it to play a leading role, as quickly as possible, during the 7th 5-Year Plan, we are confronted with the task of steadfastly deepening the second-stage rural reform, step-by-step.

Since the introduction of reform in rural areas, tremendous changes have taken place in Jiangsu. As a result of the implementation of the household contracted responsibility system, with remuneration linked to output, farm households have become independent entities with unified or separate management in the regional cooperative economy. Large surplus labor forces have been transferred to secondary or tertiary industries, while the diversified economy is thriving and rural industry advances with large strides. In response to current needs, industrial and sideline undertakings, run by peasants, and new economic associations of various forms have emerged. All these changes represent important achievements made in rural reform.

Noteworthy is the dislike, among some people, of the multilevel and multiform mixed economy in rural areas. They fear that the collective economy may collapse under other economic forms, or that economic undertakings independently run by farm households may be repossessed by higher authorities. These are lopsided views. It is necessary to point out that the structure, which is characterized by the predominance of the public-owned economy and the coexistence of various economic forms which has taken shape in rural areas, is in line with the direction of the economic structural reform and suitable for Jiangsu's economic development and needs for some time to come.

Of course, discrepancies do exist between various economic forms and management levels. Such problems should be solved by gradually, perfecting the mechanism of the socialist market and improving and developing the commodity economy.

In a word, we should further emancipate the mind and take action to deepen the second-stage rural reform in the economic and banking fields in order to facilitate a flexible circulation of commodities, effective and timely circulation of funds, and rational and smooth transfer of labor forces. Only by doing so can we advance by large strides, acquire new experience in reforms, and invigorate the rural economy while consolidating the achievements in the second-stage reform.

/9599
CSO: 4007/23

JIANGXI

BRIEFS

SOIL IMPROVEMENT--Beijing, 12 Sep (XINHUA)--A World Bank preferential loan of U.S. $30 million will be used in China's Jiangxi Province to improve 30,000 hectares of red soil, according to Bank of China here. [Text] [Beijing XINHUA in English 1029 GMT 12 Sep 86 OW] /9599

CSO: 4020/13

LIAONING

BRIEFS

LAND MANAGEMENT BUREAU--The Provincial People's Government recently issued a circular on disbanding the office of the Provincial Land Management Committee and establishing the Provincial Land Management Bureau. The circular also urges various cities, counties, and districts throughout the province to set up such a bureau in charge of land management. [Text] [Shenyang Liaoning Provincial Service in Mandarin 2200 GMT 17 Sep 86 SK] /12858

CSO: 4007/32

BRIEFS

ANIMAL HUSBANDRY--Nei Monggol Autonomous Region has made marked progress in animal husbandry production. According to statistics compiled at the end of June, the region had 38.822 million head of large and small animals except hogs, a 462,000 head increase over the figure for the corresponding 1985 period. Since the beginning of 1986, the region has slaughtered 1.923 million head of large and small animals, and the slaughter rate of animals has reached 20.7 percent. [Summary] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 25 Sep 86 SK] /12858

CSO: 4007/32

NINGXIA

BRIEFS

FARM OPERATIONS MECHANIZED--Yinchuan, 2 October (XINHUA)--More than 80 percent of the major farming operations are now mechanized in Ningxia Hui autonomous region, one of the most backward areas in China, a local official said today. Until a few years ago, draught animals did most of the ploughing and in mountainous areas, peasants carrying huge loads of farm produce on their backs was a common sight. Thanks to increased farm mechanization, 50,000 peasants, or one-third of the region's rural labor force, have been freed from the land and turned to industry and trade, said the official at the regional agricultural bureau. Farm-use trucks, tractors, threshers, harvesters, and flour and rice mills now in operation in Ningxia have a total of 1.68 million hp, 46.7 percent more than in 1980. That means an average of 663.2 hp per 10,000 mu (667 hectares), as against 500 for the country as a whole. Over the past six years, it has built many roads and electricity supply facilities in the hilly areas, making it possible for widespread employment of machines. The region's grain output rose from 1.2 million tons in 1980 to 1.4 million tons last year, while per person income in the countryside went up by 86.1 percent to reach 325.9 yuan. Peasants on the plains have bought machines with their own money, while in the poor mountainous areas, with state loans. Agricultural stations have trained 90,000 peasants to operate machines. [Text] [Beijing XINHUA in English 1458 GMT 2 Oct 86 OW] /12858

CSO: 4020/21

QINGHAI

RADIO AIRS PROBLEMS IN STOCK RAISING

HK300413 Xining Qinghai Provincial Service in Mandarin 2230 GMT 29 Aug 86

[Station Reporter's Commentary: "We Must Attach Importance to Problems That Have Arisen in Qinghai's Stock-Raising"]

[Excerpts] Our station reporter recently learned from the departments concerned that livestock-raising has declined in the eastern part of Qinghai this year. Compared with last year, the number of sheep and goats in Haidong Prefecture has dropped by 230,000, chickens have declined by 760,000, and pigs by over 10,000. The number of chickens raised in seven suburban townships of Xining City has dropped by 31.4 percent compared with this time last year. The following are the main reasons for these declines:

1. The leaders in some places lack clear guiding ideas and the concept of commodity economy. Services for stock-raising households cannot keep up with requirements.

2. The increased prices of fodder imported from other provinces has led to an increase in the negotiated prices of fodder. This has had a certain impact on the operations of stock-raising households. In addition, in some places there is a lack of attention to procurement work. As a result the stock-raising households make a loss and have to sell animal and poultry products in exchange for fixed-price fodder. They thus become less enthusiastic about stock-raising.

3. In some places little attention is paid to preventing and treating diseases of livestock and poultry, causing the stock-raising households a certain degree of economic losses.

In recent years, stock-raising has developed relatively rapidly in the eastern agricultural area of Qinghai and large numbers of households and villages specializing in this business have emerged. This has played a positive role in strengthening the peasants' concept of commodity economy, raising their income, and improving urban and rural living standards. Hence, vigorously developing stock-raising is a good thing benefitting the state and the people. We can only get a good grasp of developing it and must absolutely not slacken its progress.

/9599
CSO: 4007/25

QINGHAI LEADER CALLS FOR IMPROVED WORK IN PASTORAL AREAS

Radio on Importance of Animal Husbandry

HK210333 Xining Qinghai Provincial Service in Mandarin 2330 GMT 20 Sep 86

[Station Commentary: "Enhance Understanding, Renovate Concepts, and Speed Up the Development of Animal Husbandry"]

[Excerpt] Comrade Yu Yaobang explicitly pointed out when inspecting Qinghai in August that animal husbandry must be assigned a still higher and more important status than now. This instruction has stimulated the understanding of our cadres at all levels regarding the province's condition and latched onto the key issue in Qinghai's economic development. It is of extremely important strategic significance.

To assign animal husbandry a still higher and more important status than now requires that the cadres at all levels and the masses link the province's development of animal husbandry with the economic development of the whole country, and bear the whole country in mind when considering problems. Speeding up the development of animal husbandry is the central authorities' hope for Qinghai and is also the province's duty. Viewing future developments, to gain support from the interior of China, Qinghai must promote animal husbandry as soon as possible so as to produce more and better animal products to support fraternal provinces and municipalities.

To assign animal husbandry a still higher and more important status than now is also determined by the province's condition. Qinghai has vast national grasslands, providing the most basic conditions for developing animal husbandry. As far as economic characteristics are concerned, animal husbandry accounts for 42 percent of the province's total agricultural output value, thus holding a decisive position. Qinghai is a minority-nationality province, and animal husbandry has become the basis on which they rely for existence and development. Hence, developing animal husbandry as quickly as possible is not just a basic and all-embracing issue in the province's economic development, but is also a major political question in strengthening nationality solidarity, enriching nationality economy, and promoting social development.

To assign animal husbandry a still higher and more important status than now, we must renovate the old traditional concepts and establish the new idea of commodity animal husbandry. We must unservingly work to improve strains, build up the grasslands, and process animal products.

Vice Governor's Summation

HK210331 Xining Qinghai Provincial Service in Mandarin 2330 GMT 20 Sep 86

[Excerpts] The conference on work in pastoral areas convened by the Qinghai Provincial CPC Committee and people's government concluded in Xining on 20 September. Guided by Comrade Hu Yaobang's important speech during his inspection of Qinghai, the meeting seriously studied the question of speeding up the development of animal husbandry in the province.

Vice Governor Gabulong delivered a summation at the conclusion of the meeting. He said: In order to improve animal husbandry in Qinghai, we must renovate our concepts and make three breakthroughs in our thinking:
1) We must break through the old concept of completely separating agricultural from pastoral areas and establish the idea of large-scale agriculture in which agriculture and animal husbandry support and stimulate each other. We must follow the path of integrating agriculture, forestry, and animal husbandry. 2) We must break through the narrow concept of simple animal husbandry and establish the modern idea of integrating cultivation, stock-raising, and processing, and form a complete system in production, supply, and sales. We must follow the path of commodity animal husbandry. 3) We must break through the traditional concept of sticking to old ways. We should spur the herdsmen masses to forge ahead, and take action themselves to reform outdated habits and customs that impair nationality prosperity and hamper the people's efforts to get rich. They should gradually change their ways of operation and daily life, lead a new socialist life, and stimulate the vigorous development of economic construction and social happiness in the pastoral areas.

Comrade Gabulong called on leading cadres to change their generalized leadership methods and firmly establish the idea of struggling hard amid adversity for a long time. They should do their work in a thoroughly sound way.

/12624
CSO: 4007/27

SHAANXI

LEADERS SPEAK AT TECHNOLOGY CONFERENCE

HK261530 Xian Shaanxi Provincial Service in Mandarin 2330 GMT 25 Aug 86

[Text] The provincial conference on the advance of science and technology held a mass meeting yesterday at which Vice Governors Xu Shanlin and Lin Jizhou made speeches on problems of the province's agricultural development, measures for maintaining the continuous growth, and the need for making science and technology conform to the new situation in rural economic development.

Comrade Xu Shanlin said: During the 6th 5-Year Plan period, the province scored outstanding achievements. It has put an end to the situation of transporting grain from other places to make up for its insufficient supply. However, there are latent problems concerning grain production which are worth paying close attention to. Chiefly speaking, these problems are a sharp drop in arable land and soil fertility, aging and damaged irrigation projects, mixed up grain seeds, a sharp drop in field output volume of agricultural machinery, and a drop in agricultural investment.

Comrade Xu Shanlin said: In order to solve these problems and realize the goals of the 7th 5-Year Plan, the provincial government has decided to adopt 12 measures. Chiefly speaking, these measures are to restore and improve the irrigation work of 120 million mu of arable land, to transform 350,000 mu of saline-alkali land and low-lying farmland, to expand the area of deep ploughing farmland, to do well in popularizing cultivation of improved grain breeds, to increase the application volume of fertilizer, to popularize five items of advanced agricultural techniques such as growing crops in a standardized way and growing drought-resistant wheat on dry land, to establish 48 counties as bases for grain production, to protect the farmland by taking severe measures, to expedite the poor areas' pace of getting rich, and to increase the agricultural investment sum. Thus, we may ensure a continuous and steady growth of grain production.

Comrade Lin Jizhou said at the meeting: In order to maintain a continuous and steady growth of agriculture, we must greatly develop the rural commodity economy. We must also strive to make progress in the scientific and technological levels of the rural areas. Therefore, to implement the prairie fire plan, that is, to assign small scientific and technological projects to rural areas, is an important task. When implementing the work of science and technology, we must work out plans in a serious way, make them achieve the goals, develop in a comprehensive way, and make joint efforts in tackling the tough issues. The administrative departments must strengthen their leadership so as to strive for results.

/9599
CSO: 4007/24

CIRCULAR STRESSES AUTUMN GRAIN, OIL PURCHASE

HK100617 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 9 Oct 86

[Text] The provincial government recently issued a circular on the purchase of autumn grain and oil crops, urging all localities to seriously conduct investigations to gain further knowledge about crop harvests and natural disasters, and to properly arrange the purchase of autumn grain and the livelihood of the people in disaster-ridden areas.

The circular stresses that areas whose harvest are good or relatively good must ensure the fulfillment of the plan for purchase of grain, and strive to purchase more grain so as to make up losses in areas with poor harvests and support disaster-ridden areas. On the basis of (words indistinct), disaster-ridden areas must do a good job in the purchase of autumn grain according to the situation.

The circular stipulates that grass-roots grain departments must purchase as much grain as possible and must not refuse to purchase grain or set limits in the purchase of grain. It is necessary to strengthen management of the market. During the autumn grain and oil crops purchasing period, each county is prohibited from marketing through other channels, rice, soybean, maize, and other grain or oil próducts purchased locally by quota, and from transporting them to other provinces, before the fulfillment of the purchase plan.

/12624
CSO: 4007/30

SHAANXI

BRIEFS

CHEMICAL FERTILIZER SHORTAGE--The provincial government is taking urgent steps to resolve the shortage of chemical fertilizer for this year's autumn sowing. The province will produce an extra 600,000 tons of chemical fertilizer during the last 10 days of September and in October. The provincial Petrochemical Industry Department has set up a leadership group for this work and firmed up the production task for each enterprise. [Summary] [Xian Shaanxi Provincial Service in Mandarin 0030 GMT 21 Sep 86 HK] /9599

CSO: 4007/23

SHANDONG

BRIEFS

GRAIN PROCUREMENT--As of the end of August 1986, Shandong Province had purchased 2.8 billion jin of summer grain, setting a record. [Summary] [Jinan Shandong Provincial Service in Mandarin 2300 GMT 28 Sep 86 SK] /12858

CSO: 4007/32

SHANXI

BRIEFS

SUMMER GRAIN--Shanxi Province reaped a record summer grain harvest this year. Output reached 3.13 million tons, an increase of 3.9 percent over last year. [Summary] [Taiyuan Shanxi Provincial Service in Mandarin 2200 GMT 20 Aug 86 HK] /9599

WHEAT SOWING, WATER SHORTAGE--Shanxi is suffering serious drought this year. Vice Governor Guo Yuhuai recently put forward a number of demands on how to make a success of sowing 10 million mu of wheat on dry land. He said: Shortage of water is a serious constraining factor on agricultural production and on the development of the entire economy in Shanxi. Rainfall this year has been one-third less than normal. The province's large reservoirs are holding 51.16 million cubic meters of water less than at this time last year. The situation is extremely serious. The leaders at all levels must by no means relax organizational leadership over wheat production on dry land. Specifically, the province should appropriately expand the wheat sown area under the premise of rationally readjusting the agricultural structure. Some more good land should be assigned to the wheat crop. We should devote great effort to increasing material input for the dry-land wheat and apply more organic and phosphatic fertilizer there. [Excerpts] [Taiyuan Shanxi Provincial Service in Mandarin 2200 GMT 28 Aug 86] /9599

CSO: 4007/24

'THREE DIMENSIONS' FARMING POPULARIZED

OW250139 Beijing XINHUA in English 1826 GMT 24 Sep 86

[Text] Chengdu, 24 September (XINHUA)--"Farming in three dimensions," a method that more effectively uses earth, water, sunlight and other natural resources, is becoming increasingly popular among the farmers of Sichuan province, a local official said today.

Sichuan, in southwest China, is the country's major agricultural area, although with 101 million residents, its farmland averages less than 0.067 hectares per person.

Local economists said the method could be effective elsewhere in China. Nationwide, farmland averages only 0.13 hectares per person.

"This new method will make a lot of our people better off, " said Li Qinglian, ranking official in Sichuan's Miyi county, one of the poorest in the province.

Li said the new method takes into account height as well as length and width in planting crops. "It means you plant crops of different heights together on the same plot, the taller ones needing more sunlight, the shorter ones less," he said. "And that means you get more produce per hectare."

For example, said Li, sugar cane can be interplanted with green vegetables and watermelon and corn can be interplanted with sweet potato and legumes. And after farmers have harvested all the crops separately, they can grow mushrooms on the ground.

Li said the strategy has been perfected by a team of 54 scientists and 32 skilled farmers from throughout China working together in Miyi county.

According to Li, the new method is expected to raise the county's agricultural and produce processing output value to 86 million yuan (23 million U.S. dollars) this year, 15 percent more than in 1984, the year the team of scientists and farmers began trying the new method.

Also this year, he said, per resident income is expected to increase 50 yuan above the 1984 level to 360 yuan (97 dollars), topping the provincial average.

Thinking three-dimensionally, Miyi farmers have planted fruit trees in the county's mountain areas, above corn and forage grass.

In home courtyards, some county residents have begun growing grapes, raising chickens and pigs in the shade of the trellises, using the animals' wastes to make methane gas for cooking and lighting and the fermentation residues as fish feed.

/12858
CSO: 4020/21

BRIEFS

FERTILIZER SUPPLIES--Based on statistics, the provincial Farm Materials and Equipment Bureau supplied 4,090,000 tons of fertilizer from January to June this year, an increase of more than 1 million tons over the same period last year. However, at present stocks have been reduced and there will be a shortage of fertilizer for the autumn crops. The provincial Farm Materials and Equipment Bureau is concentrating on increasing fertilizer output and obtaining supplies from outside the province. [Excerpts] [Chengdu SICHUAN RIBAO in Chinese 25 Sep 86 p 2]

CSO: 4007/34

XINJIANG

BRIEFS

COTTON PROCUREMENT--Cotton procurement departments at all levels in Xinjiang Region have begun resolving peasants' difficulties in selling cotton by setting up more cotton procurement units and improving their service attitude. The cotton sown areas of the whole region this year have reached some 4.2 million mu and are some 460,000 mu more than last year. To date, the cotton procurement departments of all places throughout the region have signed some 940,000 contracts with cotton peasants for ordering some 4.1 million dan of cotton. The tasks of procuring cotton this year are very arduous. To avoid peasants' difficulties in selling cotton like last year, the regional cotton and hemp company has allowed grassroots supply and marketing cooperatives to manage its rural cotton procurement stations. Grassroots supply and marketing cooperatives will purchase cotton on its behalf and it will pay their expenses for work they do. [Summary] [Urumqi Xinjiang Regional Service in Mandarin 1200 GMT 20 Aug 86 HK] /9599

CSO: 4007/23

YUNNAN

BRIEFS

PRODUCE SALES--From 1980 to 1985, produce sales to other provinces increased 840 percent. In 1986, more than 200,000 mu were planted to early produce in Yunnan, output reached 310 million kilograms, and 140 million kilograms were supplied to Yunnan's markets. State-run vegetable departments sold 60 million kilograms to more than 70 cities outside the province (an increase of 58 percent over last year). The income of peasants selling the produce was 88.4 million yuan. [Excerpt] [Beijing ZHONGGUO SHANGYE BAO in Chinese 23 Sep 86 p 1]

CITRUS FRUIT OUTPUT--This year the total area sown to citrus fruit was 1.5 million mu, and gross output may reach 300,000 to 320,000 tons, an increase of 5 to 12 percent over last year. [Excerpts] [Hangzhou ZHEJIANG RIBAO in Chinese 26 Sep 86 p 2]

CSO: 4007/38

END

JPRS-CAG-86-039

18 NOVEMBER 1986

China Report

AGRICULTURE

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JPRS-CAG-86-039

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NATIONAL

IMPORTANCE OF WATER CONSERVANCY STRESSED

Beijing LIAOWANG [OUTLOOK WEEKLY] in Chinese No 27, 7 Jul 86 pp 16-18

[Article by Chen Bijiang [7115 1801 1412]: "New Appreciation for the Importance of Water Conservancy in Agriculture"]

[Text] Water conservancy is the lifeblood of agriculture. This is the scientific conclusion drawn from actual practice over several thousand years during the Chinese laboring people's struggle for production. However, in the past few years this truth has faded in the minds of some comrades. The improvement of agriculture, which is the foundation of the national economy, is an important, long-term strategic task for China's economic construction and springs from China's particular circumstances. Therefore, there should be renewed appreciation of the importance of water conservancy to agriculture.

The Role of Water Conservancy in China's Agriculture Cannot Be Underestimated

Since the People's Republic was established, tremendous achievements have been achieved in farmland and water conservancy construction, due to the attention given to it by the party and the state. In only 35 years since the nation was founded, the number of medium- and large-sized reservoirs increased from 10, before liberation, to more than 2,700. The horsepower applied to drainage and irrigation increased from 120,000 hp to more than 78 million hp. At present, the total area irrigated in China has reached more than 670 million mu. According to the annual reports of the UN FAO, this figure is the largest in the world, exceeding that of India, the United States, and the Soviet Union.

The expansion of farmland water conservancy construction has played a very important role in improving China's agricultural conditions, and in assuring high and stable yields. According to statistics, at present, the area in China that is irrigated is less than one-half of all farmland, yet the grain that is produced on it is two-thirds of the total. The People's Victory Canal, which is located in Henan, was the first large-scale project since 1949 to draw water from the Huang He. Work was started in 1951 and completed in 1953. At present, it irrigates 800,000 mu of farmland in Xinxiang City and the surrounding six counties. When this reporter boarded a train and road through this area, he looked out through the window and saw wheat growing on the land that was uniformaly tall and strong. Although this area has contracted the land out to households, it is very difficult to distinguish differences between one family or another. Not far from there, the wheat has already turned gold. In this area, one can see vast stretches of fertile blue water. A responsible comrade in the management bureau of the irrigation district explained that before the canal was built, this area was desolate, sandy, salty, and alkaline. Grain yield was only 100 jin per mu. Now, after the construction of the People's Victory Canal, the dry land can be irrigated and waterlogged land drained. This area has become well-known in north China as a high-yield grain producer. Since 1978, grain yields have exceeded 1,000 jin during successive years and have been 200 to 300 jin higher than the provincial average.

"Water conservancy stabilizes agriculture." The transformation in the People's Victory Canal district is a microcosm of rural China. China's largest plains, on the Huang, Huai, and Hai rivers, were areas that in the past were frequently visited by disastrous floods and droughts. In the early years after liberation, grain production was only little more than 45 billion jin. For a long period, food supplies needed to be sent up from the south. Since 1949, the state has placed high priority on controlling the Huang, Huai, and Hai rivers, and their plains. It has invested more than 25 billion yuan, built more than 4,000 reservoirs, drilled more than 1 million wells, and built a comprehensive, large-scale system of flood prevention and water drainage waterworks projects. This has brought the many years of drought and flood disasters under basic control. The area of infertile land has been greatly reduced. The area irrigated has been increased to more than 137 million mu, transforming this area into an important cotton producer for China. This not only has ended the era of "southern grain assigned north," it also means that more than 20 billion jin of commercial grain can be supplied annually to the state.

Some comrades view things one-sidedly and think that agriculture depends on policies, and now, with good policies, water conservancy is not important. Such a view cannot stand up to the test of experience. Shandong's Heze Prefecture was one of the first areas in the country that implemented the family contract responsibility system. In 1984, residents implemented three agricultural policies relatively well. But if areas with different water conservancy conditions are compared with one another, one sees that areas in which wheat could be irrigated three times had average per-mu yields that were over 100 jin more than in areas in which wheat could be irrigated twice. And areas in which wheat could be irrigated twice had average per-mu yields that were over 100 jin more than in areas in which wheat could only be irrigated once. Anhui's Chuxian Prefecture is well-known throughout the nation as a place that has done a good job of implementing the family contract responsibility system. But in 1984, first floods, then drought hit. Because the water conservancy projects were not systematic, the grain losses were large. In this prefecture's Dingyuan County, the canals were prepared so poorly that the reservoirs had no outlet into which water could be released. Consequently, grain production dropped more than 180 million jin from the previous year. Last year, nationally, grain production dropped 50 billion jin due to the impact of drought, flood, waterlogging, and other kinds of natural disasters (including some areas in which the area planted in grain was reduced excessively or in which interest in planting grain was low). Yet in Shandong, where farmland water conservancy construction in recent years was done well, grain production did not drop. It increased 1.9 billion jin over the previous year, setting the highest record ever, even though damage from natural disasters was not light. These examples illustrate a truth: agriculture requires good policies, but good policies are no substitute for working on water conservancy. Good policies can generate enthusiasm, but the people's enthusiasm can join only with definite conditions of production before it can help expand production or before the power of the policies can be fully realized.

Water Conservancy Is Long Journey

Two of the basic characteristics of China are that it has a large population and its arable land is small. Agricultural development depends upon intensive cultivation and increasing the yield per unit of area. Intensive cultivation includes technical measures, such as soil preparation, seed selection and propagation, plant protection, field management, and others. It also includes setting up water conservancy projects, expanding the area of irrigated land, improving the capacity to prevent and contain floods, and other measures to improve the conditions of production. At the end of this century, China's population will reach 1.2 billion people. Even if today's standard of an average 800 jin of grain supplied per person is maintained, national grain production must reach 960 billion jin. Obviously, when the present area planted in grain cannot be much expanded, it must be reached by increasing the yield per unit of area. It will be very difficult to reach without a firm base of farmland water conservancy work. According to predictions of relevant government agencies, every jin of grain that China produces requires approximately 1 cubic meter of water. At the end of this century, if total grain production is to reach 960 billion jin, the area of land irrigated must, at minimum, reach 800 million mu. The water drawn for irrigation must increase about one-third over that of the present. This requires that we set up water conservancy projects, scientifically and practically drawing up subsurface water, collecting rainfall, and putting water conservancy to good use.

Considering China's present water conservancy in absolute terms, the area of land irrigated and the size of water resources both are large. But due to the large size of China's population, both are below world averages in per capita terms. The area of land irrigated in China is the largest in the world, but there is only 0.8 mu of irrigated land per capita. China's water resources are the sixth largest in the world, exceeded only by those of Brazil, the Soviet Union, Canada, the United States, and Indonesia. But on a per capita basis, China is only 84th. As far as China's water resources and natural rainfall are concerned, farmland in the Chang Jiang basin and south of the basin is only 36 percent of the national total, yet it has 82 percent of the runoff. Although the farmland in the Huang, Huai, and Hai basins is 40 percent of the national total, it receives only 6.5 percent of the runoff. Consequently, this area often experiences disastrous droughts. In the northwest and in the border areas, there still are many areas that even lack sufficient drinking water for humans and animals. Natural precipitation varies considerably from place to place and season to season. Nationally, precipitation is most concentrated between June and September.

Particularly noteworthy is the fact that in not a few places in recent years farmland water conservancy construction has not received the attention that it should have. Not only has water conservancy construction not expanded, even existing water conservancy works have not been properly managed. Many have been seriously damaged and their efficiency has declined. According to Ding Zemin [0002 3419 3046], director of the agricultural irrigation department of the Ministry of Water Resources and Electric Power, China expanded the area of irrigated land, on average, by 17 million mu annually, between 1949 and 1980. But during the period of the Sixth 5-Year Plan, the irrigated area in China contracted by more than 7 million mu. The area that could be drained also contracted approximately 25 percent, due to the silting of waterways and destruction of equipment.

According to Ding Zemin's analysis, China's farmland water conservancy construction can be divided into four groups. The first is the area rich in water resources that is centered on the Zhujiang Delta and Taihu basin. Here, irrigation, drainage, and flood prevention are basically sound. The main task now is to dredge and clear the waterways. Another group are areas that in the past began projects and built canals but used low standards and did not have complete projects. Here, there is considerable work that needs to be done. Not only must the waterworks be managed well bad existing projects utilized, but there should also be complete equipment installed and maintained. In another group, few projects were built in the past. Today, problems with irrigation, drainage, and low yields have not been solved. In the final group are some places in the northwest. Insufficient water resources mean shortages of water for drinking and irrigation. Now, the first task is to address the problems of drinking water and soil erosion, based on the varying water resources and topography. Ding Zemin feels that at present the task of building water conservancy works is extremely difficult, no matter what the situation or the area.

New Opportunities for Water Conservancy Construction

During the "10 years of chaos," China's agricultural production was severely damaged. In many places, even the most basic subsistence for peasants was problematic. After the 3d Plenum of the 11th CPC Congress, the Central Committee adopted a series of measures that have permitted peasants to recuperate and do well. One of the measures was to restrict temporarily the scale of farmland water conservancy projects and to halt work on projects that were not indispensable. At that time, this was necessary. But now the agricultural situation differs greatly from what it was then. Most recently, we visited some rural officials and peasants. They all said that the agricultural economic reforms in China have now brought an excellent opportunity to work on water conservancy. Now everything is ready. All that is needed is for our leading officials to organize and lead.

In terms of economic resources, in recent years, the problem of subsistence for most farmers has been eliminated, except for a few border or poor areas, or areas in which the population is sparse or old. Incomes have increased significantly. Some places have already started to become wealthy. Now it is possible to take a portion of this money and spend it on water conservancy projects. It is no longer necessary to depend on tightened belts to work on projects. In terms of labor power for the projects, a large quantity of surplus labor has appeared in China's villages since the family responsibility system was implemented. It is estimated that at present surplus rural labor (including surplus work days during the agricultural slack season between winter and spring) is approximately 30 percent of the national total. There is plenty of labor power for water conservancy projects. There is no need to carry out an exhausting labor campaign, as in the past: "As soon as the 29th of the 12th lunar month arrives, finish your dumplings and it's time to set to work." Happily, in addition, the broad masses of peasants themselves now are asking for water conservancy projects. They fully appreciate that if agriculture is to enjoy another large jump in development, there now must be increases in investment and work on farmland water conservancy, which provides rear support.

Under these conditions, it will not be difficult to start water conservancy construction, so long as rural officials at every level carry policies to the masses, explain benefits and costs clearly, and do deep and detailed organizational work. Recently, this reporter visited villages in Henan. This province has a Xinzheng County, which is south of and not far from Zhengzhou City. During spring of this year, the county-level party committee held a work meeting for officials at the county, township, and village levels, focusing on the mobiliation of the peasants to work on farmland water conservancy. At first, many comrades had their doubts about this. Later, response was tremendous when the county committee announced measures such as having those who benefit contract to take on responsibility and offering bonuses to those who complete the work ahead of schedule. Some peasants put aside work on their own houses and used the money and construction materials to work on water conservancy projects. Some young people delayed their marriages in order to work on the water conservancy projects. According to statistics, the county raised more than [illegible].3 million yuan within only 3 months, and 100,000 people labored on the projects every day. More than 5,300 wells and ponds were built or repaired, more than 470,000 meters of canals were dug, involving the movement of more than 400,000 cubic meters of earth and stone. This not only restored irrigation to the 130,000 mu of land that had lost irrigation due to damaged projects, it also extended irrigation to more than 40,000 mu for the first time. When we visited this county, the provincial water conservancy department was holding a work meeting for the entire province. Liu Zhengwei [0491 2973 1218], vice secretary of the provincial party committee, came especially to encourage the entire province to use the methods of Xinzheng County. During the meeting, we spoke with many leading officials who had many years of experience in water conservancy work and in grassroots responsibility for managing water conservancy work. They all feel that rural China definitely will see a new wave of interest in building water conservancy projects, in the wake of the improvement of the agricultural economy. In this wave of enthusiasm, everyone will draw on the experiences and lessons of the past, and will respect science and emphasize returns more than at any time in the past. This will bring more practical benefits to the peasants.

The Economic Benefits of Scientific Appraisal of Water Conservancy Investment

At present, there are some people who feel that although water conservancy is important, it requires large investments, takes a long time to pay off, and offers small returns. They say, to commercialize production, they are perfectly willing to work according to economic principles and it is better to use money to invest in building a factory than in constructing water conservancy projects. It pays off to start an enterprise. Therefore, they are unwilling to use money for water conservancy and are not enthusiastic about it.

Indeed, are the economic returns from investment in farmland water conservancy construction high or low? The answer requires scientific analysis. In the past, under the influence of "leftist" thought, there were some unscientific projects built that had low returns on investment. However, generally speaking, the economic returns on all projects built according to natural laws and a scientific attitude are really not low. These economic returns are different from those in building factories or operating an enterprise. When we evaluate their economic returns, we must look comprehensively at both direct and indirect returns, micro and macro returns, and short-term and long-term returns.

For the direct benefits from water conservancy projects, most people point to the income that water conservancy departments collect, mainly water-use fees. In order to encourage and support agricultural development, the state has subsidy and aid policies for agricultural infrastructure. Therefore, regardless of whether water fees are calculated according to the area of land irrigated or according to the quantity of water used, the level of fees is set low. Generally, it is only sufficient to pay per capita expenses to maintain the overseeing government offices and to do small-scale maintenance. It is impossible to undertake large-scale improvements. Nor is it sufficient for recouping the basic construction investment in water conservancy projects such as water reservoirs, embankments, and wells. However, if the indirect returns from water conservancy construction are considered (from the perspective of the peasants, these actually are direct benefits), the returns on investment in many water conservancy projects, such as reservoirs, mechanized wells, and the Huang He water diversion project, are not necessarily less than those from starting new enterprises. The State Huang He Committee supplied the following information to us: Since 1949, the two provinces of Henan and Shandong, along the lower portion of the Huang He, have invested 1,154,000,000 yuan in water diversion projects for irrigation. The average annual expenditure has been 60.94 million yuan. The average annual net returns in the irrigated districts are more than 210 million yuan. The projects are paid off in a little more than 5 years. The return on investment is 19 percent. This really is not less than the average industrial enterprise. Among the projects was the People's Victory Canal. When the canal was being built, the main canal and the associated projects in the fields consumed more than 37 million yuan. Although at present the operating units only collect a little more than 1 million yuan annually in direct income, if viewed in terms of the economic returns to agriculture during the past 30 years in the entire irrigation district, then the repayment period was only 2 years. The ratio of returns to capital reached as high as 5.9.

As for water conservancy projects for flood prevention and drainage, it is possible that for many years after construction, due to the weather, they will not fulfill their potential use because of too little precipitation. In some cases, the peasants in some water reservoir districts and downstream will seldom receive any benefits. The returns on investments in these water conservancy projects must be considered in terms of long-term benefits and macro benefits. It is a mistake to look simply at the partial benefits immediately visible. A few years ago, there were some places that only considered immediate benefits and ignored flood-prevention work on rivers. Consequently, as soon as heavy rains hit, the rivers flooded and large areas of farmland were damaged. Losses were heavy, even disrupting the state economic plan for the region. This is an important lesson. In ancient times it was said, "Do not wait until you are thirsty before you dig the well." This kind of farsighted attitude should be used in water conservancy construction.

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CSO: 4007/503

GREATER RELIANCE ON LAW IN RURAL ECONOMIC DISPUTES URGED

Beijing LIAOWANG [OUTLOOK WEEKLY] in Chinese No 29, 21 Jul 86 p 7

[Article by Xiao Wen [2556 3306]: "Improve Rural Economic Legal Enforcement"]

[Text] In recent years, the rural economy has come alive in the wake of the continually deepening rural reforms. Especially after the second stage of reforms began, commercial production has expanded and distribution channels have increased. Horizontal economic links have been strengthened and the entire countryside has shown tremendous vitality.

However, there has been an increase of every kind of economic dispute as the economy has prospered and economic links between individuals and between collectives have been strengthened. Improving economic legal enforcement becomes ever more needed. At present, many rural officials and peasants lack legal knowledge and management experience. In many economic activities, decisions are made rashly and blindly, consequently giving rise to many disputes and cases. They are unable to use the law as a weapon to solve these disputes and cases, thus damaging rural economic development and social unity.

In view of the rural situation at present, improvement of economic legal enforcement has the following important aspects:

First, implementation of economic contracts must be improved. In recent years, individuals among themselves, individuals and collectives, and economic departments of the state have increasingly signed all kinds of economic contracts. It has virtually reached down to individual households. But in the course of implementation, there have also been many disputes. Contracts should have the force of law, but there are some people who do not understand this. When they sign the contracts, they have not thought about the matter sufficiently, or when it is implemented they do not carry it out conscientiously. The results are many contradictions. For example, in one village there are 410 economic contracts of various kinds signed within a certain period of time, and there were some 360 disputes, involving more than 47,000 yuan. This directly hurt normal production in the village. In another case, a village-operated enterprise had contract disputes about accounts receivable with more than 100 household sales representatives. This created serious cash flow difficulties and forced the enterprise to stop production and declare bankruptcy.

In addition, every level of rural official must learn to use methods of legal enforcement to mediate the relationships among peasants, collectives, and the state. For example, ever since the contract responsibility system has been implemented in China's rural areas, the expense of paying for the grain used by officials and school teacher subsidies in collective water conservancy projects, road maintenance, housing projects, schools, utility services, and other projects, aside from using collective income from industrial and sideline industries, has mostly been obtained by assessing individuals. Most peasants cheerfully pay. But in many places, the amount assessed commonly exceeds the peasants' responsibilities, which causes the peasants to react with resistance and refusals to pay. In this kind of situation, when officials go door-to-door to collect the assessments, many disputes result, which damages unity and the expansion of collective activities. In one township, all of the more than 80 schoolteachers who taught at collective schools were not paid for more than half a year because the peasants refused to pay the assessments.

Furthermore, in recent years, many villages have begun to undertake large-scale construction projects, working hard to improve the peasants' housing environment and health conditions. This is basically good, but it has given rise to many disputes because many places lack centralized regulations and strict enforcement of construction codes, land use, division of house sites, etc. This has directly obstructed the smooth progress of rural construction. The most effective way to solve these problems is to use the legal system. Economic sanctions should be used to solve these kinds of disputes and cases.

Now, how should economic legal enforcement be improved?

First, both the symptoms and the causes must be addressed together. At the fundamental level, the hidden troubles and conditions that cause economic disputes and cases must be eliminated. That is to say, at the same time that rural economic disputes and cases are adjudicated, the causes must be addressed too. The individuals involved should be helped to learn lessons and study the appropriate laws and regulations that they disobeyed, so they will know thoroughly such matters in future economic activities. All will monitor each other, and all kinds of potential economic disputes and cases will be eliminated as soon as they appear as sprouts. This will protect the healthy and smooth expansion of rural economic construction.

Second, finding solutions should be kept as the primary goal, because the overwhelming majority of cases of rural economic disputes are really civil disputes. The two sides should be encouraged to mutually accommodate the other and work out solutions. This is the basic principle in China's civil cases. Experience clearly proves that during the resolution of rural economic disputes, finding solutions should be the primary goal. Whatever cases need not go to court should be dropped. The results are excellent. This way of resolving disputes and cases generally leaves no aftereffects, and consequently has been praised by officials and masses. They say, in the past, "1 year of litigation meant 10 years of fights"; but today it is said that "after litigation, we're still friends."

Third, the economic courts must be improved, perhaps even establishing a traveling economic court which would go to townships and towns to adjudicate economic disputes and cases. Judicial agencies must change the old habit of "handling cases by sitting in court." A much more effective method is for them to go the grassroots level and as quickly as possible go down to the townships and towns to adjudicate cases. It is said that a People's Court in one place began in the latter part of February of this year to assign 23 judges and bailiffs to live temporarily in a township to take up the key points and decide cases right on the spot. In less than a month they had settled 944 economic disputes and cases from 21 villages. This high rate of case disposition is rarely seen.

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SAVING DEPOSITS IN AGRICULTURAL BANKS REPORTED

Zhengzhou ZHONGGUO CHENGXIANG XINXIBAO in Chinese 28 Sep 86 p 3

[Excerpts]

August 1986 Unit: 10,000 yuan

Area	August Sum	% of Plan	Yuan/person
Beijing	15,764	51	40
Tianjin	43,160	122	117
Hebei	106,958	127	22
Shanxi	38,555	74	18
Nei Monggol	20,615	39	14
Liaoning	45,763	93	20
Jilin	25,111	49	16
Heilongjiang	77,035	95	37
Shanghai	120,790		269
Jiangsu	132,848	76	25
Zhejiang	127,884	96	37
Anhui	43,828	68	9
Fujian	101,242	130	45
Jiangxi	67,055	91	23
Shandong	47,240	65	6
Henan	115,038	84	16
Hubei	105,599	101	26
Hunan	78,985	100	16
Guangdong	201,676	120	40
Guangxi	68,938	106	20
Sichuan	192,934	117	22
Guizhou	27,626	63	10
Yunnan	66,267	78	22
Shaanxi	67,542	111	27
Gansu	35,001	109	20
Qinghai	18,441	80	62
Ningxia	11,870	93	36
Xinjiang	113,738	208	124
Chongqing	21,746	163	
Wuhan	15,687	109	
Shenyang	8,473	172	
Dalian	5,833	61	
Harbin	2,453	61	
Guangzhou	29,270	143	
Xi'an	10,491	88	
Total	2,117,503	102	25

CSO: 4007/47

PRC DISCOVERS NEW WAY TO GROW HYBRID WHEAT

OW180426 Beijing XINHUA in English 0118 GMT 18 Oct 86

[Text] Xian, 18 Oct (XINYUA)--Chinese genetic engineers have found an easy, new way of growing hybrid wheat in a short time.

The process was discovered by Li Zhensheng, president of the Xian school of the Chinese Academy of Sciences, and his assistants.

Distant hybridization, the crossbreeding of two plants belonging to far different species, is the effective way to create new species and improve old ones. But it needs much time and the transfer of genes is not entirely controlled, so the purposeful implanting of fine genes into any specific plant has troubled world geneticists.

Starting in 1978, Li and his assistants began to apply genetic engineering to distant hybridization. They discovered that the change in the wheat seed's color is closely related to the number of chromosomes, upon which they cultivated four years later the world's first single wheat with a blue endosperm, the nutritive tissue surrounding the embryo, as its genetic sign.

New research in this area is especially important to advances in agricultural production because a wheat seed's 21 pairs of chromosomes could lead to the cultivation of 21 species of such single wheat and further to the cultivation of new breeds of wheat.

At present, Li and his assistants have cultivated four species of this hybrid wheat, and they plan to make ten by 1990, developing all 21 species as quickly as possible.

At the 15th international genetics conference held in India in December, 1983, Li presented his paper on the cultivated wheat, which is disease-resistant and adaptable to adverse conditions.

The paper attracted much attention of the participants, according to officials at the Xian school of the Chinese Academy of Sciences.

In recognition of his achievement, Li has been chosen to chair an international chromosome engineering symposium to be held next week in Xian, the officials said.

Li, 55, graduated from the Shandong Agricultural College in 1951. One of the wheat breeds he developed earlier is now sown to 1.6 million hectares in China, bringing an additional harvest of 600,000 tons every year.

The breed, called "Xiao Yan 6", won a science creation award, first class, in 1985, the officials said.

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CSO: 4020/25

ADVANCED TECHNOLOGY INCREASES AGRICULTURAL INCOME

OW201902 Beijing XINHUA in English 1527 GMT 20 Oct 86

[Text] Beijing, 20 Oct (XINHUA)--China has increased its agricultural income by introducing advanced scientific technology in the last three years.

The Ministry of Agriculture, Animal Husbandry and Fisheries has popularized 244 new techniques in the field, resulting in income increases of 9.84 billion yuan (2.6 billion U.S. dollars), a ministry official said here today.

Most of the techniques have been adapted in such fields as farming, animal husbandry, aquatic industries, farm machines and energy resources, the official said.

"It is easier for farmers to accept these new techniques when they show obvious positive economic results," he said.

The overuse of chemical fertilizers has made the soil less fertile. Since 1983, the ministry has helped farmers use mixed-feed on 6.5 million hectares of land and trace-element manure on 4.6 million hectares.

This has increased income by 957 million yuan (250 million U.S. dollars), and 659 million (170 million U.S. dollars) respectively, the official said.

Introduced from abroad, the technology of poly-house cultivation has been utilized on 800,000 hectares of cotton, oil crops, fruit and vegetables. By doing so, the peasants have earned an additional 520 million yuan (141 million U.S. dollars).

Advanced techniques have also been introduced in the cultivation of rice on 50,000 hectares of north China's uplands, where corn had been the traditional crop. This has resulted in an additional income of 48.5 million yuan (13.1 million U.S. dollars) over planting corn.

The skill of raising poultry in cages has also been popularized in rural areas in 20 provinces and autonomous regions. Now poultry farmers can earn more from each chicken then when using old techniques.

Farmers in Beijing suburbs now supply urban markets with 100,000 tons of eggs from 16 million caged hens.

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CSO: 4020/25

VEGETABLE EXPORTS 'HAVE SOLD WELL,' COULD INCREASE

HK220840 Beijing CHINA DAILY in English 22 Oct 86 p 2

[By staff reporter Tian Ying]

[Text] China's vegetable exports have sold well, but the country's potential for such exports has yet to be fully realized, according to an official from the country's leading import and export corporation.

About $130 million worth of canned vegetables were sold on foreign markets in the first eight months of this-year, and exports are expected to hit $200 million by the end of December, said Li Lingxian, head of the canned food department of the China National Cereal and Oils Import and Export Corporation.

Chinese canned vegetables are popular in West Germany, France, Japan, and United States, Canada, northern Europe and Hong Kong, Li said.

Half of the exported canned vegetables are mushrooms, while Chinese canned asparagus, tomatoes, broad beans, cauliflower and water chestnuts are also big sellers in foreign countries and regions, Li said. More than 100,000 tons of canned asparagus alone are exported each year, Li said.

About 190,000 tons of Chinese fresh and frozen vegetables and pickles, valued at $60 million, were sold on foreign markets between January and July this year. Exports for the year are expected to exceed $100 million, said Lu Chengguan, who is in charge of the corporation's fruit and vegetable department.

About 70 fresh or frozen varieties including garlic, potatoes, cabbages and turnips are exported to Japan, Southeast Asia, Hong Kong and Macao each year.

But this figure is not worthy of the country's rich vegetable resources, vast expanse of land and low labor costs, Lu said, adding that the country should fully tap its potential to improve old varieties and introduce new ones.

According to the newspaper ECONOMIC INFORMATION, a recent national meeting on vegetable farming held in Wuhan resulted in several proposals to improve vegetable quality and increase variety and production.

Farmers should use scientific methods to grow vegetables. Traditional methods and old experience are not enough to grow export, quality crops, representatives at the meeting said.

Agriculture research institutes should study vegetable disease resistance, soil and fertilization and introduce new varieties to growers, and vegetable-growing centers should be established, the representatives said.

The government should place emphasis on the technology of vegetable storage and on developing the canned food industry.

Those at the meeting also proposed that the government take immediate steps to reduce industrial pollution that has harmed the growth of vegetables in suburban areas.

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LIAOWANG ON PRC FORESTRY CRISIS, SOLUTION

HK190546 Hong Kong LIAOWANG OVERSEAS EDITION in Chinese No 41, 13 Oct 86 pp 22-23

[Article by Liaowang reporter: "The Crisis Faced by Chinese Forestry and Its Way Out"]

[Text] Dong Zhiyong, vice minister of forestry, recently issued a warning: If the current cutting rate continues unchecked, forest reserves of two-thirds of China's forest regions will be exhausted and there will be no forest trees to fell there in 10 years or so to come. This warning was issued by Dong Zhiyong according to an extensive survey conducted by forestry departments at a national conference of forestry department and bureau heads held not long ago. He said: There should be a strategic change in China's thinking on the management of forestry, moving from the previous concept of developing Forestry for "economic utilization" to that of developing forestry for "ecological utilization." Only when we understand and direct forestry production in line with the principle of ecological utilization can China's forestry be significantly developed.

Graduated from the Forestry Department of the Dongbei (Northeast) Agricultural College in 1952, Dong Zhiyong, 58, has worked in the forestry sector for quite sometime and was appointed vice minister of forestry the year before last. Looking back at the road China has traversed with its forestry, he said: Since 1979 voluntary afforestation activities have been carried out in all localities throughout the nation and a responsibility system in forestry production has been introduced in rural areas, thus resulting in a large number of households and combines specializing in forestry. All this has breathed new life into forestry. However, at present forestry has not freed itself from three predicaments or crisis.

The first crisis is a crisis in forest resources. Forest growth and cuts are not balanced and the "excessive cutting" of forests remains out of control.

The second is the economic crisis of forestry enterprises. Handicapped by exhausted forest resources, a number of forestry enterprises have found it difficult to maintain simple reproduction and have reached the verge of bankruptcy.

The third is a qualified personnel crisis. Now forestry departments throughout the country have only 150,000 professionals of various types. By 1990 the actual need will amount to approximately 300,000 people but currently, the number of professionals graduating from forestry colleges and schools every year is just several thousand people. Moreover, some of the graduates are not willing to work in out-of-the-way forest regions.

"Excessive Cutting" of Forest Upsets Ecological Balance

China's state-owned forest regions are mainly distributed in the Northeast, Nei Monggol, the Southwest, and the Northwest, covering an area of some 60 million hectares or equivalent to 6 times that of Jiangsu Province. The timber reserves in this vast area constitute 70 percent of the nation's total forest timber reserves. These forest regions are mostly situated in the upper reaches of the Nation's rivers and the areas where minority nationalities live in compact communities. In the geographic area of the Northeast and Nei Monggol, the Da Xinganling, Xiao Xinganling, and Zhangbai Shan forest regions form an ecological system with forest as the main body, nursing the Songnen, Sanjiang, and Liao He Plains and giving shelter to the Hulun Buir Grassland renown at home and abroad. It provides a natural defense for the development of agriculture and animal husbandry in the Northeast. The Yalong Jiang, Jinsha Jiang, Min Jiang, and Longbai Jiang forest regions in the Southwest are the source of the Chang Jiang. The Qilian Shan, Altay Shan, and Tian Shan forest regions are the lifeblood of agriculture and water conservancy in the Southwest.

To strengthen the management, development, and utilization of state-owned forests, the state has set up 131 forestry administrative enterprises in state-owned forest regions one after another. In recent years, to protect resources in forest regions and to curb the "excessive cutting" of forests, the state, in view of the very strained timber supply, has had to slash the quotas of forest regions to allot and transfer timber and it has taken various measures to keep "excessive cutting" of forests in check. However, in terms of the real situation, the problem of "excessive cutting" of forests remains quite serious. According to statistics, of the nation's 131 forest bureaus, 61 are involved in "excessive cutting" of forest and 25 are confronted with the problem of exhausted exploitable forest resources. Cutting forests excessively has seriously upset land protection and the ecological balance. The materials of the survey conducted by the Office for Soil and Water Conservation of Heilongjiang Province show that because "excessive cutting" of forests and other reasons, soil erosion has caused a loss of 5 million hectares of land in the province, including 4 million hectares of cultivated land, thus reducing land fertility and the output of crops. In the Southwest's forest regions, the perennial excessive cutting of forests has drastically reduced the forest resources in the area where the Chang Jiang rises and caused serious soil and water loss and constant mud-rock flows.

Forestry Enterprises Shoulder a Heavy Economic Burden

To solve the problem of excessive cutting, since 1979 the state has reduced some of its timber output and increased import of timber. Logically, the problem of excessive cutting of forests should have been alleviated or solved but in reality, not only has the problem not been alleviated or solved, but it is also becoming more and more serious. The reasons behind this state of affairs are that many major economic relations between the internal and external departments of forestry enterprises have not been straightened out and there are still many problems in the existing price system, tax policies, and the planning, financial, and management systems currently in force and the enterprises have had to bear an unbearable economic burden for a long time. To lessen the heavy economic burden, the enterprises had to fell trees for timber "outside the plan" very reluctantly so as to survive for the moment. In 1979, organizations engaged in the forestry sector in Heilongjiang Province produced 11.32 million cubic meters of timber and handed over 26.2 million yuan in profits to the state; in 1984, timber output dropped to 9.72 million cubic meters and the target of profits should have been lowered but in reality, the profits turned over to the state's financial departments instead drastically amounted to 100.2 million yuan or the equivalent to 380 percent of the 1979 figure.

Save Forest Resources -- State With Straightening out Economic Relations

With many problems to tackle, which one should we start with in saving forest resources? Based on their investigations, forest experts held: The problem of a resource crisis in state-owned forest regions is in essence an economic issue. Therefore, it is necessary to start with straightening out economic relations. In other words, among other things, the economic relations between external and internal departments of forestry enterprises should be smoothed out.

Among others, the enterprises' total timber output should be readjusted to a rational level and efforts should be made to ensure most enterprises will gradually carry out forest cutting according to rational quotas by the later period of the Seventh 5-Year Plan.

In terms of external economic relations, it is now necessary to straighten out things in the timber price system and to thoroughly wipe out the irrational phenomenon in which there currently exist prices for timber within the state plan, timber outside the state plan, and for imported timber. Some tax policies incompatible with the characteristics of forestry should be abolished. In addition, it is imperative to set up a forestry fund system so as to meet the needs of restoring forest resources.

In terms of internal economic relations, among other things, it is necessary to start with the operations and management of the internal departments of forestry enterprises, to continue to perfect the various forms of the economic responsibility system compatible with the characteristics of forestry, and to fully mobilize the enthusiasm of staff members and workers as well as the masses of people of forest regions for production. Efforts should also be made to change forest regions' production patterns, to strengthen later economic associations, to reform the labor and employment system in the regions, and to tighten the management and supervision of forest resources proceeding from the internal departments of enterprises.

The Way Out For Forestry to Extricate Itself From a Predicament -- Change the Thinking of Managing Forestry

According to China's forestry development plan, by the turn of this century, China's forest cover will increase from the current 12 percent to 16 percent. In other words, from the start of the Seventh 5-Year Plan, the area of newly afforested land will amount to 30 million mu a year and that of hillsides closed to livestock grazing and fuel gathering to facilitate afforestation 10 million mu. By the year 2000, the country will have an additional 600 million mu of forest. In the last few years, China has made herculean efforts in afforestation. According to statistics, more than 100 million mu of land was afforested every year. However, the statistics were "inflated." In reality, the figure is about 50 million mu. Moreover, the survival rate is just about 40 percent. This being the case, the real figure is only 20 to 30 million mu. Therefore, it is no easy job to afforest 30 million mu of land a year in the future.

Vice Minister of Forestry Dong Zhiyong pointed out: To extricate forestry from the predicament currently confronting it and to accelerate the rejuvenation of China's forestry, it is imperative to be determined to effect a strategic change in the current thinking of managing foresty. He said: China's thinking of managing forestry has all along failed to break away from the convention of "giving first place to major timber" for quite some time. In the 1960's, although we advanced the idea of using forests continually, it was confined to the continuous use of timber. Therefore, we have for many years judged whether a forestry enterprise is well operated or not by how much timber it has turned out, how much timber it has provided to the state, and how much profit it has earned from timber trade. This has objectively helped encourage forestry enterprises to engage in wanton felling or excessive cutting of forests in defiance of the state plan, thus grossly impairing forest resources.

In fact, on no account is the forestry function confined to producing timber. It is multifaceted. In forest regions there are not only arbors, bushes, herbs, bryophytes, and lichens, but also many fungi, microbes, and wild animals as well. They form a complicated ecological system compatible with the natural environment. Therefore, as far as a large forest region is concerned, not only does it produce timber and other forest products for the state but it also plays a multiple ecological role in conserving water, achieving soil and water conservation, giving protection against wind in fixing sand, protecting farmland, purifying the atmosphere, preventing pollution, and in providing an environment for tourism and recreation.

A forest itself is a big ecological system and a big system in the terrestrial ecological system. The conditions of forests have a bearing both on the environment in which human beings live and multiply and on the development of the national economy. As far as a country is concerned, if it has limited forest resources, it can satisfy the needs of the national economy for timber and other forest products by importing these goods or by other means. However, the aforesaid ecological role played by forests cannot be replaced by imports or other means.

Dong Zhiyong said: Since forests have such a great ecological role to play, it is necessary to turn our previous concept of managing forestry for "economic utilization into that of managing forestry for "ecological utilization." He maintained: Stressing the ecological utilization of forests does not necessarily negate its economic utilization, because ecology and economy are indivisible. Only when the maximum ecological benefit is maintained can a continuous supply of timber and other forest products be obtained. On the contrary, the evil consequences of ecological imbalance will ultimately bring huge economic losses. In the past, although we gained some economic results in wantonly opening up forests, more often than not, it will take us several times the economic resources or efforts of several generations to make up for the losses caused by such denudation. Such as soil and water losses, breakout of mountain torrents, and environmental pollution.

Dong Zhiyong said: The change in the thinking of managing forestry needs an appropriate change in the work of all fields. First, it is necessary to reform the current forestry policies, forestry management system, and the economic structure. Next, it is necessary to put various forests, such as mountain forest, plain forest, and various protection forests; the planting of trees on the fringes of villages, along rivers and roads, and round cottages; and urban greening work under unified management and operation and to work out unified plan for such work from the ecological point of view. Moreover, we should no longer regard forestry as the exclusive affair of forestry departments but should instead regard it as a matter that concerns society's various departments. Therefore, all society should concern itself with forestry.

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CSO: 4007/37

DEFORESTATION, SPREADING DESERTS CAUSE CONCERN

HK211016 Beijing CHINA DAILY in English 21 Oct 86 p 3

[Text] China's three forest regions in the Northeast, Southwest and South are shrinking rapidly and this is contributing to natural disasters and allowing deserts to spread, according to CHINA ENVIRONMENTAL NEWS.

Because of the loss of forest reserves, drought, flood, soil erosion, silting of water-ways and growth of deserts have become more and more serious. Areas affected by disasters in 1984 were four times the size of those in 1952, according to the report.

The following information also came from the report:

In Northeast Heilongjiang, the province with the largest forest cover, tree area has dropped to 35 percent from 52 percent of the 1950s. Yichun Forest Region, famous as the province's "home of the Korean pine," now has only a 1.7 billion-cubic-meter timber reserve. It had 4.2 billion cubic meters in the 50s.

Yunnan Province's forest cover dropped from 54 percent in the early 50s to 21 percent in 1982. In the province's Xishuangbanna area, forest cover dropped from 55 percent in the 50s to 33 percent in 1979.

The percentage of overall forest cover in Sichuan, another province in the Southwest, dropped from 20 in the 1950s to 12.5 in the late 70s. In heavily-forested west Sichuan, tree cover went from 40 percent to 14 percent in the same period.

Hainan Island, with a rare tropical forest in the South, lost its forested area at an average rate of 2.6 percent per year from the 50s to 1979. The forest cover there dropped from 30 percent to 13 percent during the period.

Jilin Province in the Northeast is becoming drier. In the average five years now there are three of drought to two of flood. Over the past 150 years this has changed from an average one year of drought and four of flood. The western part of the province has become a semi-arid area.

Sichuan Province, which used to have plentiful rain, began to suffer from annual droughts recently, with spring dry periods lasting as long as 100 days. The loss of forest cover has affected the rainfall pattern.

According to the Dujiang Weir Hydrologic Station in Sichuan, the Minjiang River's average rate of flow decreased by 28 cubic meters per second in the 70s, compared to that in the 60s. The Dujiang Weir, which has been controlling waters in the Chengdu Plain for several thousand years, now has to deal regularly with lack of water in drought season and too much water in flood season. Both are blamed on excessive tree cutting.

Another problem caused by tree-felling is soil erosion. The eroded area in Sichuan has now increased to 1.55 million square kilometers from 1.16 million in the 50s. Every year the country loses 50 billion tons of soil.

China's present desert area is 170,000 square kilometers, including 50,000 square kilometers of newly-formed desert. Together with another 158,000 kilometers of near-desert, China's arid regions make up 3.4 percent of the country.

Semi-arid grassland in the north yields less now than it did in the 1950s. Only 525 kilograms of grass can be grown per hectare, while in the 50s the figure was 2,025 kilograms.

/12624
CSO: 4020/25

BRIEFS

NEW GROWING TECHNIQUE--Nanjing, 22 Oct (XINHUA)--A new growing technique combining agriculture and forestry has been popularized in China, an agricultural expert said today. The method, compound eco-system, an advanced scientific experiment in crop and tree combination planting, was the topic of a symposium which closed last Sunday in Nanjing, capital of east China's Jiangsu province. China has a long history of crop rotation and developing agriculture, forestry and animal husbandry at the same time. Chinese scientists at the meeting considered the traditional Chinese growing methods guided by modern ecologic theory as helpful to overall farming, forestry, animal husbandry, and fisheries development, side-line occupations, and raising economic output. The agricultural experts regard use of the new growing method as an important way to achieve China's agricultural modernization. Over 3.3 million hectares of farmland in seven provinces have been used for testing this method. As natural conditions vary, provinces individually decide what crops to develop from their experience in farming. For instance, north China's Henan, Hebei and Shandong provinces grow paulownia trees and wheat at the same time, while in Jiangsu province metasequoia trees and paddy rice are cultivated together. [Text] [Beijing XINHUA in English 0807 GMT 22 Oct 86 OW] /12624

LABOR PRODUCTIVITY RAISED--Beijing, 21 Oct (XINHUA)--China's rural economic reform has raised the productivity of labor and land, an official of the state statistics bureau said today. According to the official, between 1978--when the reform began--and 1985, the rural social output value per worker rose 92 percent to 1,706 yuan (361 U.S. dollars). During the period, the output value of one hectare of cultivated land rose 49 percent to 20,000 yuan (about 5,400 U.S. dollars), he said. "These increases show the country's agricultural foundation has been solidified," said the official. He attributed the productivity growth to the rural household contract system, which allows farmers to sell remaining crops at market prices after they have fulfilled their government contracts, and to the overall development of farming, forestry and animal husbandry. Other factors were the growth of fisheries, sideline occupations, industrial enterprises and service trades, he said. [Text] [Beijing XINHUA in English 1444 GMT 21 Oct 86 OW] /12624

NATION PRESENTS FISHING MACHINERY--Manila, 17 Oct (XINHUA)--The Chinese government presented a set of fishing machines to an aquaculture training center under the Philippine Agriculture and Food Ministry today in response to a U.N. call to help Asian countries expand fish and prawn farming. The machines, including an impeller aerator, a beater, a mixer and a soft pelleter, are adapted to the needs of developing countries like the Philippines for promoting fish and prawn breeding. A demonstration operation of the fishing machines was held yesterday, the world food day, at the Asian aquaculture center under the U.N. Food and Agriculture Organization (FAO). More than 300 fishery experts and technicians from various parts of the country attended the demonstration. Many of them praised the Chinese machinery for its small size, compact structure, easy operation and less power consumption. Deputy agriculture and food minister Emil L. Ong accepted the four fishing machines today from a representative of the Chinese Agriculture, Livestock Breeding and Fisheries Ministry. He suggested that an exhibition of Chinese farming and fishing machinery be held in Manila next year. The Chinese ministry presented a set of fishing machines to Thailand's Agriculture and Cooperatives Ministry last month. [Text] [Bijing XINHUA in English 1830 GMT 17 Oct 86 OW] /12624

CSO: 4020/26

BRIEFS

WFP AID IN WATER CONSERVATION--Lanzhou, 15 Oct (XINHUA)--With help from the World Food Program (WFP), northwestern China's Gansu province is speeding to make arid land useful. Located in the arid areas of the province, the five projects are being built mainly to bring in water from the Yellow river to irrigate the local dry land, which covers 67,418 square kilometers and has a population of 5.5 million people. The completion of the projects, expected 1987-88, will make another 24,000 hectares of land useful, said an official from the provincial department of water conservation. Work began in the early 1970s, and WFP began to aid the projects in 1982, the official said. "Instead of aiding with money, WFP offers three kilos of wheat and 50 grams of cooking oil for each worker per day, making a total of 172,000 tons of wheat and 2,800 tons of cooking oil for the five projects." Some of the projects have already been of benefit to the area, the official said. Last year, grain output increased by 4,320 tons, and the increase is expected to be 15,000 tons this year. "At least the local peasants now have enough to eat," he said. [Text] [Beijing XINHUA in English 0756 GMT 15 Oct 86 OW]
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CSO: 4020/26

BRIEFS

SALT OUTPUT--As of the end of August, Hainan had produced 251,000 tons of crude salt, fulfilling 99.63 percent of the annual plan. At present, 126,000 tons of crude salt have been transferred out of the island. There are 9 state-run saltworks on the island, with an annual production capacity of 200,000 to 300,000 tons, 60 to 70 percent of the salt is sold outside the island. [Excerpts] [Zhengzhou ZHONGGUO CHENGXIANG XINXIBAO in Chinese 5 Oct 86 p 1]

GUANGDONG SHELLAC OUTPUT--Guangzhou, 26 Sep (XINHUA)--Farmers working independently in mountainous areas of Guangdong Province in southeastern China have invigorated the local shellac industry, officials said today. They said that thanks to the farmers' work, Guangdong's shellac output is expected to top 300 tons this year, 100 tons more than in 1985. Shellac, produced from tree resin and used in making varnish, is in short supply both within China and abroad. According to the officials, Guangdong farmers have planted more than 26,000 hectares of shellac, and in doing so have improved their standard of living. Probably the most successful has been Yang Xiquan, a farmer in Yuanxin township in Xingning County. According to one official, Yang was "living from hand to mouth" until he planted his first 13 hectares of shellac trees on unused mountain land. In 1985 alone, the official said, Yang earned more than 7,000 yuan (U.S. $1,890) by producing 2 tons of raw shellac, and he expects to earn more than 10,000 yuan ($2,700) this year. [Text] [Beijing XINHUA in English 0752 GMT 26 Sep 86] /9599

CSO: 4020/31

YULIN PREFECTURE FIGHTS SERIOUS DROUGHT

HK300857 Nanning Guangxi Regional Service in Mandarin 1100 GMT 29 Sep 86

[Text] Yulin Prefecture is being hit by serious autumn drought. Over 500,000 people are now fighting the serious drought and protecting young crops.

The rainfall in Yulin Prefecture since the beginning of autumn this year decreased by about 80 percent over the same period of previous years. As a result, the water stored in reservoirs decreased by some 300 million cubic metres compared with the same period of last year. Some 1.51 million mu of late rice are hit by the drought, accounting for 37.5 percent of the total late rice-growing area.

To fight drought and protect young crops, leaders at all levels in Yulin Prefecture, in accordance with local reality, have adopted various effective measures. For example, Yulin City has appropriated some 35,000 yuan as a special fund for fighting drought, and will draw water from the (Xiaopingshan) Reservoir in (Rongan) to (Funian), (Rendong), and other towns and townships hit by the drought. Pingnan County has reduced its power consumption in daily life to ensure the power supply needed by the rural areas to fight the drought. Yulin Prefecture has so far saved some 377,000 mu of late rice in the antidrought struggle.

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CSO: 4007/44

SECOND SUGARCANE HARVEST IN 1986

OW131134 Beijing XINHUA in English 1056 GMT 13 Oct 86

[Text] Nanning, 13 Oct (XINHUA)--A new policy helped sugarcane growers in China's Guangxi Zhuang autonomous region, one of the country's major sugarcane producers, reap their second bumper harvest this year.

A provincial official told Xinhua today that the sugarcane output this year totals nine million tons, nearly 22 percent more than the record harvest last year. The raw cane is expected to produce one million tons of sugar.

Guangxi's subtropical climate provides excellent growing conditions for sugarcane, but, only 113,000 hectares of land in the region were used for planting sugarcane with an annual output of 1.8 million tons before 1977.

The regional government has adopted a number of flexible measures to assist sugarcane growers in recent years. They include raising the purchasing price of sugarcane, allowing farmers to trade sugarcane for grain, providing them with sufficient fertilizer and fine quality strains of seedlings and encouraging them to adopt advanced growing technology. As a result, the region's growing areas for sugarcane are nearly double the 1977 figure.

The local authorities also encourage farmers to plant sugarcane on dry land. A batch of drought-resistant, early-ripening, high-yield, fine quality strains have been cultivated in recent years. By using scientific growing methods and good seed strains the per unit yield increased from the previous 22.5 tons per hectare to the present 43.5 tons.

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CSO: 4020/26

HEILONGJIANG

BRIEFS

1986 HARVEST INCREASE OVER 1985--Harbin, 13 Oct (XINHUA)--Northeast China's Heilongjiang province is harvesting a bumper crop this year as more than 16.8 million tons of grain, soybeans and sweet potatoes have been brought in from the fields -- 2.8 million tons more than last year. The province's cultivated land accounts for one-tenth of the country's total. The harvest has been completed despite a big flood last year. Local officials estimated the province's total output is liable to exceed the harvest year of 1984. In addition to meeting self sufficiency, the province also sold five million tons of crops to the state annually over the past few years. Some of the soybeans and corn were exported. [Text] [Beijing XINHUA in English 1050 GMT 13 Oct 86 OW] /12624

PADDY RICE HARVEST--Heilongjiang Province reaped a bumper paddy rice harvest this year. The per-mu yield of the province's 1.6 million mu of paddy rice fields averaged more than 250 kg. [Summary] [Harbin Heilongjiang Provincial Service in Mandarin 1000 GMT 24 Sep 86 SK] /9599

CSO: 4007/44

HENAN AUTHORITIES ARRANGE DISASTER RELIEF

HK270321 Zhengzhou Henan Provincial Service in Mandarin 2300 GMT 26 Sep 86

[Excerpts] According to HENAN RIBAO, the provincial party committee and government held a meeting of responsible comrades of provincial organs on 25 September to convey the spirit of the standing committee meeting of the provincial party committee and arrange the work of disaster relief through production.

Zhang Zhigang, member of the standing committee of the provincial party committee and vice governor, spoke at the meeting. He said: This autumn the province has suffered some of its worst natural disasters on record, the main one being drought. According to the statistics of departments concerned, some 80 million of the 100 million mu of autumn crops are affected by the disasters, and output has fallen by more than 30 percent on 65 million mu. There is no harvest at all on 21 million mu. The situation is quite serious.

The CPC Central Committee and State Council have showed great concern and support since the disasters occurred. The party, government, and army leading organs have led the cadres and masses of the province to wage stubborn struggle against the disasters. They have done as much as possible to reduce the losses.

However, as the disasters this year have been frequent and serious, the task of relief through production in the coming winter and spring is extremely arduous. Zhang Zhigang demanded that the party committees and government at all levels view the gravity of the situation, which must not be taken lightly, and also view the favorable conditions for overcoming difficulties and avoid flying into a panic and losing heart.

Zhang Zhigang said regarding the guiding principles and measures for disaster relief and extricating people from poverty that the province must regard self-salvation through production as an urgent and important task in the coming winter and spring. At present the effort to sow sufficient wheat and sow it well must be regarded as the overriding central task. All sectors must support the rural areas in sowing wheat, so as to lay a good foundation for a bumper summer harvest next summer and keep the masses mentally stable. We must make good use of the favorable opportunity during winter and spring to carry out water conservancy construction and improve the capacity to resist natural disasters. We must vigorously launch self-salvation through production, with self-reliant efforts as the main factor and state support as supplementary. We must make proper arrangements for the masses' livelihood in disaster areas.

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CSO: 4007/44

HUBEI

BRIEFS

COTTON EXPORTS--In 1984, Hubei exported more than 6,000 tons of cotton, in 1985 Hubei exported 42,000 tons, and this year the province plans to export 70,000 tons of cotton. [Excerpts] [Wuhan HUBEI RIBAO in Chinese 30 Sep 86 p 2]

CSO: 4007/47

VICE GOVERNOR SPEAKS ON WINTER CULTIVATION

HK260829 Changsha Hunan Provincial Service in Mandarin 0100 GMT 26 Sep 86

[Text] On 25 September, when formulating plans for this year's winter cultivation, Vice Governor Cao Wenju pointed out: When engaging in production, no matter what kind of production it is, we must change our practice of starting readjusting the agricultural structure in the spring of every year. Whether it be the readjustment of farming industry or the development of animal husbandry and processing industry, we should start it in winter.

Vice Governor Cao said: Our requirements for winter cultivation are not just to increase the output of grain, oil crops, and fertilizer but also to increase the supply of fodder for animal husbandry, as well as raw materials for the food industry. This requires us to cast away the outdated concepts of small-scale agricultural production and guarding against natural disasters in the spring. We should put equal stress on the production of grain, fodder, grain for industrial use, and organic fertilizer. In particular, we should integrate the winter cultivation with the growing of winter grain crops, processing of agricultural and livestock products, and diversified operation. We should plan in an all-round way and engage in coordinated development. This new production arrangement helps promote constant growth of grain production, as well as developing the animal husbandry and processing industry. Under the present circumstances in which the rural areas' productive forces are still at a low level, this is a good road leading tens of thousands of households to attain prosperity at an earlier time.

This year, there emerged in the province prefectures which yielded over 3 million dan of rape, as well as counties which yielded over 800,000 dan of rape. This shows that we have the potential for developing winter cultivation; and should, from now on, greatly develop the growing of rape and wheat, develop demonstration fields in production, and strive for a breakthrough during the 7th 5-Year Plan period.

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CSO: 4007/44

HUNAN HOLDS CONFERENCE ON WATER CONSERVATION WORK

HK301435 Changsha Hunan Provincial Service in Mandarin 1100 GMT 29 Sep 86

[Excerpts] Prefectural administration commissioners, city mayors, and county heads who have just returned from the anti-drought first line met in Changsha on 29 September to decide on the focus of farmland capital construction for this winter and next spring. They said: If we do a good job in tapping the potentials of the existing water conservation facilities, and in security control over reservoirs and flood prevention, it amounts to building six Shaoshan irrigation areas each irrigating 1 million mu of land. Of 12,000 reservoirs in the province, over 3,000 have problems. Of the 237 large and medium-sized reservoirs in the province, over 90 are being used under control, and the water stored reduced by 860 million cubic meters. All this shows that doing coordinated work in tapping the potentials of the existing water conservation facilities and in security control over reservoirs and flood prevention is an urgent matter in the province's water conservation work.

In view of this, the recently held provincial water conservation work conference urged all hilly areas not to start new projects before the completion of their local water conservation projects and to put the focus on reinforcing the existing reservoirs, on removing obstacles in irrigation ditches, on repairing leakages of reservoirs, on closing hillsides to facilitate afforestation, on preventing soil erosion, and on repairing small ponds and dykes. In particular, efforts should be made to solve the problem of potable water for human beings and animals in areas seriously hit by the drought.

To properly carry out water conservation construction, from this winter, the province will institute the labor accumulation system and introduce the method of collecting water charges in farmland irrigation.

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CSO: 4007/44

HUNAN

RADIO VIEWS PROBLEMS IN AGRICULTURAL CHEMICALS

HK030223 Changsha Hunan Provincial Service in Mandarin 2200 GMT 2 Sep 86

[Station Reporter's Commentary: "There is Urgent Need for Improvement in the Sales and Handling Environment of Agricultural Chemicals in Human"]

[Text] On 21 August, this station exposed how a few business units had entrapped the peasants by selling agricultural chemicals that had deteriorated and become useless. The departments concerned attached great importance to this matter. The manager of the provincial agricultural material supply company delivered a radio speech calling for supply companies at all levels to seriously review the current state of agricultural chemicals supply work and solve problems the moment they are discovered.

However, this reporter is not too optimistic that people will mend their ways when their errors are pointed out. This is because the supply and marketing cooperatives, which alone handle the sales of agricultural chemicals throughout the province, are affected by certain difficulties that they cannot overcome themselves, and are still unable to fundamentally prevent a repeat of the appearance of deteriorated and useless agricultural chemicals on the market.

Sources familiar with the sales and handling of agricultural chemicals have stated that the supply and marketing cooperatives bear responsibility when the peasants buy deteriorated and useless agricultural chemicals, but the cooperatives too have many difficulties. At present the agricultural chemicals plants in Hunan are operating without production licences. It therefore is quite common for their products to fail to meet state quality standards. In 1984, the provincial agricultural material supply company bought 500 tons of Rogor and 150 tons of chemicals for treating rice blast. The consignment started to rot after less than 3 months in storage. Although the plant took some of the chemicals back, the replacements it provided were still not up to standard, and the supply company could only sell the chemicals by reducing the price by from 300 to 500 yuan a ton.

The supply and marketing cooperatives lack adaptibility in the face of the new chemicals used in agriculture in recent year. Hence the agrotechnical departments often feel that there is nothing they can do in devising new formulas for helping the peasant combat plant diseases and insect pests.

It is said that the agrotechnical departments should not be censured for this. China's current level of agricultural chemicals production is low and only some 40 varieties are produced, of which only 10 or so can be produced in Hunan's plants, and many of those are old varieties that need updating. The agrotechnicians in some places can only introduce new imported chemicals to the peasants and neglect the reality that Hunan is currently seriously short of these new chemicals. The peasants therefore delay in buying China-made chemicals, and this in turn delays the prevention and cure of plant diseases and insect pests. And all the time the agricultural chemicals that the supply and marketing cooperatives and preparing to sell are stockpiled in large quantities in the warehouses. Thus both agricultural and commercial economic losses are caused.

The heavy losses suffered by the supply and marketing cooperatives in selling and handling agricultural chemicals also represent a major factor in the unsatisfactory supply of these chemicals. Hunan is a key grain-producing area in the whole country, and is also a major consumer of agricultural chemicals. According to our information, the province uses about 70,000 to 80,000 tons of these chemicals a year. The busy season for selling these chemicals lasts only 4 months; for the rest of the time, they have to be stored in warehouses. Without reckoning the heavy transport and storage costs, the reserve capital taken up by these stored chemicals is too much for the supply and marketing cooperatives to bear. For instance, at the end of last year, the supply and marketing cooperatives had 52,000 tons of agricultural chemicals in stock for use this year. This was taking up 160 million yuan in capital, on which 19 million yuan had to be paid to the banks in interest. Due to their inability to obtain reasonable financial subsidies, the supply and marketing cooperatives' enthusiasm to handle agricultural chemicals was affected. The reserve stocks in some city and county supply and marketing cooperatives have been reduced this year, and in some places, supply cannot even meet demand. The leading departments have criticized this situation, and the peasants have raised objections. The comrades of the supply and marketing departments feel that they look bad whatever they do.

How can this passive situation be reversed? A number of economists familiar with the situation in sales and handling of agricultural chemicals in Hunan and elsewhere hold that although these chemicals are important materials in agricultural production, the amount used varies from year to year depending on the severity or otherwise of outbreaks of plant diseases and insect pests. In addition, the season for the use of these chemicals is short, while the season for their storage is long, and attention must constantly be paid to guarding against fires, explosions, and pollution. These factors determine that agricultural chemicals differ from other production materials such as chemical fertilizer and fuels. Around the time the chemicals are sold, close cooperation and effective support is required between the producers, the consumer units and individuals, and indeed the government economy. It is regrettable that people have not attached a high degree of attention to this special feature.

/12624
CSO: 4007/37

BRIEFS

LAKE USED FOR HYDROPONIC FARMING--Shanghai, 15 Oct (XINHUA)--Scientists in a research institute here have succeeded in growing crops on large tracts on Taihu, China's third largest fresh-water lake. The method is called "hydroponics" -- planting crops in gravel or other solid material with their roots immersed. The researchers say hydroponics saves organic fertilizer for other uses and requires less effort and lower costs than conventional cultivation. Since 1984, researchers have grown more than 30 types of vegetables, fruits, cereals and spices on the country's first large-scale hydroponics field, on Taihu lake in east China's Jiangsu province. The project has been listed as a key one during the country's current five-year plan. The cost is lower than the hydrotropic greenhouse, one research said, adding that the technique can be easily mastered by peasants. "This method will make it possible to build vegetable fields and orchards in the middle and lower reaches of the Yangtze river, providing an example for other areas of the country," he said. [Text] [Beijing XINHUA in English 1139 GMT 15 Oct 86 OW] /12624

PEANUT AREA, OUTPUT--More than 2 million mu has been planted to peanuts in Jiangsu. Donghai and Ganyu counties, the major peanut producing areas, expect to increase output by about 6,000 tons over last year. [Excerpts] [Nanjing XINHUA RIBAO in Chinese 9 Oct 86 p 1]

CSO: 4007/55

JIANGXI

PIGS SOLD ON MARKETS NATIONWIDE

Nanchang JIANGXI RIBAO in Chinese 21 Aug 86

[Article by Mo Zhengchao [5459 2973 2600]: "Jiangxi Food Departments Actively Open Up Hog Markets Outside the Province, 70 Percent of County and City Companies Have Established Contacts with Other Provinces, 22 County and City Companies in First Half of Year Each Sold More Than 5,000 Hogs Outside Province"

[Text] Conforming with the new situation of deregulated pig production and many channels for circulation and under the premise that the provincial and prefectural markets are stable, Jiangxi's food departments are actively opening up markets outside the province, organizing in large numbers distant purchases and sales, making a contribution to lessening the difficulty peasants have in selling pigs. In the first half of the year, food departments at every level in Jiangxi bought more than 876,000 live pigs, 20.5 percent of Jiangxi's slaughter rate; of these, 277,000 pigs were shipped outside the province, a 109 percent increase over the same period of the previous year. Since July, the amount of pigs being sold outside the province has continued to grow; it is estimated that another 80,000 butcher hogs have entered markets in Guangdong and Fujian.

The sales this year of pigs outside the province have been carried out, firstly, without central planning arrangements, and secondly, without provincial planning guidance. The achievement of such sales illustrates that officials and workers in the food system already have the ability to adapt to an entirely deregulated hog business. At present, 70 percent of the county and city food companies have established hog sale contacts with other provinces and municipalities; in the first half of the year 22 county and city food companies sold more than 5,000 hogs outside the province. Yushan and Yugan county food companies sold more than 20,000 hogs, and there were four county food companies -- Dongxiang, Xinfeng, Shangrao, and Wannian -- which sold more than 10,000 hogs. Many counties and cities have established long-term, fixed professional contacts with business units outside the province. Yingtan General Meat Plant is processing meat products in association with the Shanghai Dahua Meat Products Plant; these products are available in Shanghai, Fuzhou, and other large and medium cities. Of the 14 general meat plants in

Jiangxi, 11 are currently putting emphasis on technical transformation of production and reforming their product mix. These measures will greatly facilitate the sale in other provinces of Jiangxi meat products.

Actively opening up hog markets outside of Jiangxi will both protect the peasants' enthusiasm for raising pigs and revitalize the business of every level of food departments. In the first half of the year, the price paid by food departments in Jiangxi per 100 kg of live hogs was 20.38 yuan higher than in the second quarter of last year, and from 12 to 44 yuan higher than the price paid in the neighboring provinces of Shandong, Jiangsu, Zhejiang, Hunan, and Anhui. But due to the arduous struggle of officials and workers within the system, losses for the first half of the year as compared to the same period last were reduced by 510,000 yuan; at the same time, 7.85 million yuan in taxes and profit were paid to the state. The Wannian county food company bought more than 20,000 hogs in the first half of the year; aside from more than 5,000 hogs sold within the province, more than 3,900 hogs were exported and more than 10,000 hogs were sold elsewhere in China; more than 13,000 yuan in taxes and fees were paid and profits were more than 127,000 yuan; such good economic results are unprecedented.

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NEI MONGGOL

BRIEFS

NEI MONGGOL SUPPLY-MARKETING CO-OPS--The supply and marketing cooperatives throughout Nei Monggol Autonomous Region have succeeded in increasing their capital and business. To date 2.3 million peasants and herdsmen throughout the region have become stockholders in these cooperatives and invested more than 40 million yuan in them. The number of peasants and herdsmen who have become stockholders of these cooperatives accounts for 80 percent of the total population of the rural and pastoral areas. [Summary] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 22 Sep 86 SK] /9599

SOYBEAN EXPORTS--Nei Monggol recently exported 61,111 tons of soybeans to the Soviet Union, surpassing the original plan by 1,111 tons. Nei Monggol will earn about 28,447,000 swiss franc in foreign exchange. [Text] [Zhengzhou ZHONGGUO CHENGXIANG XINXI BAO in Chinese 2 Sep 86 p 1]

CSO: 4007/50

BRIEFS

TOBACCO AREA, OUTPUT--Estimated output of high and second-grade tobacco on the 500,000 mu sown to tobacco in Shaanxi is expected to exceed 900,000 dan, about a 20 percent increase over last year. [Excerpt] [Xi'an SHAANXI RIBAO in Chinese 9 Oct 86 p 1]

CSO: 4007/55

SHANDONG

LIANG BUTING ON RURAL WORK

SK090315 Jinan DAZHONG RIBAO in Chinese 23 Sep 86 pp 1, 3

[Speech by Liang Buting, secretary of the Shandong Provincial CPC Committee, at the provincial rural economic work forum on 17 September: "Developing the Commodity Economy Is the Focus of Rural Work"]

[Text] Our current forum on rural economic work has proceeded successfully. During the forum, various prefectures, cities, and departments have expressed many good opinions. Through discussions and revision, two documents have been created, which will be printed, distributed, and executed after this forum in the name of the provincial party committee and the provincial government. The forum is about to end, and I would like to put forth some additional opinions on some issues.

1. Developing the Commodity Economy Is the Focus of All the Current Rural Work

The central topic of this forum is to study how to further develop town and township enterprises and enliven the commodity circulation of the rural areas. This topic has been raised in line with the general title of developing the rural commodity economy. Instead of being our subjective assumption, this topic is an objective demand of the current stage of rural economic development.

Since the 3d Plenary Session of the 11th Party Central Committee, we have conscientiously implemented the line, principles, and policies of the party Central Committee, and in a couple of years, a radical change has taken place in the rural situation as a whole. Over the past few years, we have, on the one hand, carried out a series of measures to set wrong things right in the field of politics, thoroughly negated the "Great Cultural Revolution," corrected the "leftist" mistake of "taking class struggle as the key link," and implemented policies toward some categories of the rural people. As a result our situation has been changed from a turbulent one to peaceful one, relations between the various political sectors have been brought into better balance, the initiative of various fields has been mobilized, and a political unity and stability has been formed. On the other hand, we have striven to eliminate the "leftist" influence in the rural economic work, have corrected the erroneous guiding principles of "being large in size and collective in nature" and "taking grain as the key link," have paid attention to handling affairs in line with the natural and economic laws, have carried out the economic responsibility system with a focus on the family-based contract system, and have delegated autonomy in production and management to peasants. In addition, we have readjusted the industrial structure, raised the prices of agricultural and sideline products, and lightened the burden on peasants so that they can rest and build up their strength. Thanks to the arduous and effective work at this stage, peasants' enthusiasm in production has risen to an unprecedented high level, agricultural production has developed greatly, peasants' problems in food and clothing, which remained unsolved for generations, have been basically solved, and, therefore, our rural economy has changed from a restricted state to a completely new stage.

The new stage of rural economic development has set a new task for us. This new task is to further emancipate and develop the social productive force, raise the commodity rate of products turned out by various trades in the rural areas, vigorously develop the commodity economy, and readjust the relations among the primary, secondary, and tertiary industries of the rural areas in order to promote the comprehensive development of the rural economy as a whole. Economic development is uneven in our province's rural areas. However, generally speaking, most rural areas have begun to enter this new stage. This fact is beyond doubt. Many facts show that after solving their problems in food and clothing, peasants at this stage have set a still higher demand on production, have expanded their management sphere, have witnessed great changes in their consumption structure, and have set new demands on their material and cultural livelihood. After having enough food to eat, they need some money to spend, want to exchange their surplus products with others, and want to transfer their surplus labor force to other trades. Instead of concentrating all of their energy on a couple mu of fields, most peasants have wanted to engage in a still greater job. All those villages which have achieved prosperity before others and whose per-capita income has surpassed 1,000 yuan have taken the path of vigorously developing town and township enterprises and expanding commodity production. The people in these areas neither give up agriculture nor obstinately grasp it. However, the diversified economy has comprehensively been developed in these areas. In general, income from industry accounts for 80 to 90 percent of the total, and the proportion of their agricultural and sideline products marketed reaches about 80 percent. The peasants' livelihood has notably been improved thanks to the fact that economic development has brought about a situation of cultural and educational flourish and technological progress. Thus, we may really see the embryonic form of the new socialist rural areas. We should say that these areas are moving from "being comfortably off" to being fairly well-off. The situation of these areas today will be the tomorrow of the vast rural areas. The paths that they have taken are the only ways for enlivening the rural economy.

The tasks ahead of us at present are to develop the rural commodity economy, to move from a self-sufficient economy of a closed or semi-closed type to market exchange, and to engage in production in line with market demands. These tasks are new for the peasants as well as for cadres at all levels.

Therefore, we must certainly pay tuition fees and temper ourselves in the arduous course of learning to develop the socialist commodity economy. Simultaneously, through tempering ourselves in setbacks and successes, we will be able to enhance our ability and take a leap from the semi-natural economy to the commodity economy. In order to guide and support the peasants to realize this leap, we should consolidate and develop the worker-peasant alliance, protect the enthusiasm of the peasants, and ensure the development of the rural economy and the overall national economy. Leaders at all levels and the persons in charge of organizing social economic life should understand and master the objective law of the shift from the natural economy to the commodity economy which does not go along with the people's will. If they understand, their work will become the impetus for the development of social productive forces. If not, economic and social development will be obstructed.

In order to suit the development of the rural commodity economy, leaders at all levels and departments in charge of rural work should make great improvement in terms of their ideology, work, and workstyle. First of all, they should study the knowledge of commodity economy, enhance their ideas of commodity economy, and firmly foster an idea of focusing on developing the commodity economy. All fronts and departments should focus their work on serving the development of the commodity economy. The rural areas should focus their reform work on serving the development of the commodity economy, advocate and support the affairs favorable to the development of the commodity economy, and resolutely eliminate outdated ideas interfering with the development of the commodity economy. In short, we should regard the development of the commodity economy as a starting point as well as an ending point of the current rural work.

2. Vigorously Developing Rural Secondary and Tertiary Industries Is a Strategic Priority for Vitalizing the Province's Rural Economy During the 7th 5-Year Plan Period

The secondary and tertiary industries in the province's rural areas have entered a new stage of making big strides forward. Of course, development is uneven. Some areas have started the development of secondary and tertiary industries while some areas with good conditions are preparing for taking a leap.

To a very great extent, the development levels of the secondary and tertiary industries in the rural areas reflect the levels in the management of economic work, in the development of the national economy as a whole, in the progress of culture, education, science and technology, and, more important, in the understanding of leading persons of the development of the commodity economy. Township enterprises occupy a decisive strategic position in the national economy. However, not all our comrades understand this point, which is of extreme importance, and the situation in which people do not pay attention to it and take the initiative in doing their work is not uncommon. Therefore, in order to achieve a great development in township enterprises during the 7th 5-Year Plan period, and make a breakthrough in both range and quality, the first thing to be carried out is to unify and enhance the understanding of leading persons at all levels and of all departments.

We should fully understand that at present township enterprises have become the major pillar of the rural economy, and will surely become an important pillar of the national economy as a whole following the continuous development and improvement of reform. Judged from the situation in the whole province, the development of township enterprises has begun to display its tremendous role in revenues, market arrangements and foreign trade, and in supporting agriculture and absorbing rural surplus laborers. Last year, the profits and taxes handed over by township enterprises throughout the province accounted for one-eighth of the provincial revenues, the commodities provided by them accounted for one-fourth of the total volume sold on markets, their export products accounted for one-eighth of the total value of local export products, and their direct agriculture-oriented funds totaled more than 78 million yuan. Township enterprises also rendered great support to rural construction, and the development of various social undertakings. Over the past few years, about 80 percent of the nearly 1 million laborers diverting from agricultural production every year have entered the secondary or tertiary industries in the rural areas, leaving their farmland but not their hometowns. This shows that the present such thriving situation in our national economy, in particular the rural economy, is sustained by a very important factor--township enterprises. In areas where township enterprise development is rapid and of a high level, people lead a fairly well-off life. It will be easier for a town or township to develop an undertaking if they have several hundred thousand, or million yuan of financial resources. In such a town or township, not only can its economic and social development be made to flourish, but also can its building of the spiritual civilization be promoted, its people be in high spirits, its social order be stable, its cadre-people relations be fairly harmonious, and its party committee and party branches of its villages enjoy fairly high prestige. We may say that its work will be very smooth.

We should also fully understand the important significance of township enterprise development in accomplishing the four modernizations. The party Central Committee has called for building socialism with Chinese characteristics. If we want to have Chinese characteristics, we cannot mechanically copy the patterns of other countries. What are the Chinese characteristics? We cannot define them very clearly because we are still in a stage of continuous exploration and summarization. In my opinion, the party Central Committee has made correct strategic policy decisions on at least two issues. One is the coexistence of various economic sectors, and the other is the integrity of industry and agriculture, and of the urban and rural economies. Comrade Xiaoping summarized that our country has vast territory, abundant resources, and a dense population, but has a poor foundation to start with. Thus, we must truly create roads suitable to our own conditions in the course of socialist modernization. Many countries with different social systems in the world developed industry in many large cities. The malpractices brought about by these countries are more and more serious, and the contradictions in this regard are more and more prominent. We are never allowed to take the same disastrous road of the economically developed countries now that we are in the period of making great industrial development. The most important outlets for integrating the urban and rural economics are that the cities should guide the rural areas and the rural areas should support the cities to develop and expand the rural economy, and that small towns characterized as small regional political, economic, and cultural centers should be established throughout the rural areas. By so doing, we can solve the problems on jobs arrangements for surplus rural labor forces, urban employment, communications and transport, housing, and narrowing the differences between the urban and rural areas and between workers and peasants. Viewing the current situation in rural economic development, we understand the fact that the economically developed areas truly have presented a scene of prosperity since the establishment of small towns began to take shape, plans have been set up one after another, service facilities and public utilities are under development, and society and nature have taken on a new look. All of this indicates that the development of town and township enterprises occupies an irreplaceably important position in the construction of socialism with Chinese characteristics. So, we must be more farsighted to truly place the development of town and township enterprises in a strategic position.

3. We Must Conduct a Series of Reforms to Serve the Development of the Rural Commodity Economy

We must conduct a series of reforms in order to suit the demands of the development of town and township enterprises and rural commodity production. The reform in service of the development of the rural commodity economy can be called the second-step reform if we link it to the reform carried out in the previous stage. All trades and professions should explore new experiences and ways by smashing the trammels of old principles, tasks, policies, and systems. The speeches delivered by comrades from various cities, prefectures, and provincial-level departments at this forum have characteristics of their own as well as common characteristics. The common characteristics are to implement the guidelines of reform; to bring the development of town and township enterprises in line with their work plans, the scope of service work, and the agenda of the work of leadership; and to regard it as one of the important tasks and attend to it. This is great progress.

We should proceed from reality and different local conditions, and define different guiding principles for different levels while guiding the rural areas to develop the commodity economy. The areas where the town and township enterprises are underdeveloped and lack funds and have a poor foundation to start with should concentrate on developing agriculture, making the most of local natural resources, developing the processing of farms and sideline products, and developing the production of small commodities making good omissions and deficiencies to well serve the large enterprises. This is a "snowball-rolling" method. By so doing, we can accumulate reserve strength for gradual development. By adopting this principle, we do not need many funds, need not buy large equipment, but can make sure to comparatively stabilize the production, supply, and marketing situation, and to score faster results in a short period of time. This is also a road that the areas where town and township enterprises are well developed have taken. Practice shows that the results from taking this road are good. The areas with considerably developed town and township enterprises, powerful economic strength, and a certain higher technological foundation should pay attention to improving the quality of products, enhancing the management level, and upgrading competitiveness in the course of development. These areas should not adopt a development policy of basing themselves on agriculture, and carrying out crop farming, breeding, and processing alone. Instead, they should also shoulder greater tasks for developing the national economy, take over some planned state projects through bidding, establish a production structure under which crop farming, breeding, and processing are arranged in line with the needs of foreign trade, develop an export-oriented economy, take on the task of earning foreign exchange through exports, march toward domestic and world advanced levels in the same trades, and enter domestic and world markets. All areas, either developed or underdeveloped in commodity production, should pay attention to establishing lateral economic ties and developing key enterprises, and produce highly competitive products.

The principles for township enterprise development in localities of different categories should not be worked out in terms of absolutes or uniformity. This is because in underdeveloped localities, there are good areas and enterprises, and in fairly developed localities, there are also weak units. In making plans and arrangements for township enterprise development of the whole province or a locality, we should consider resources, favorable conditions, and markets and strive to reduce and avoid ill-considered projects. With regard to where a project should be built, or where funds and raw materials should be spent on a priority basis, we should take into account both the returns of the project and the overall social benefit, both "add flowers to the brocade" and "send charcoal in snowy weather," and consider making a balance in all localities on the premise of undertaking the projects with the best results.

Reforms in the various fields in rural areas should be carried out in line with the principles of being resolute, and being brave in making explorations and creating the new, and of being cautious, paying attention to the capacities of local financial departments at various levels and the abilities of enterprises to carry them out, and properly handling the relationship between immediate and long-term interests. With their own characteristics, township enterprises should open up their own ways of development, and refrain from copying some methods adopted by state enterprises in the past, or relying on the state to take the entire responsibility. If not, they will lose vitality. Based on this principle, the "Several Regulations on Further Accelerating Township Enterprise Development" discussed and revised at this forum set forth some policies to relax control in order to enliven the economy within our terms of reference and financial capacity. In brief, the regulations deal with such major issues as the systems of funds, energy resources, raw materials, trained personnel, and processing of farm and sideline products.

Township enterprises should rely on themselves in fund and raw material supplies. With regard to the funds of township enterprises, the "regulations" grant certain preferential treatment in the fields of taxation, credit, pricing, overhaul funds, depreciation funds, and funds for developing new products. Raw materials needed by township enterprises should be mainly regulated by markets. Township enterprises will enjoy the same treatment in material distribution as the collective enterprises run by counties if they produce brand-name, quality, special, new, and export products. This also represents a great support to township enterprises.

At present, a major factor restricting township enterprise development is the shortage of energy resources. Evidently, the installed capacity of the large power plants to be built in our province during the 7th 5-Year Plan period to the state plan is not small, but it is still difficult for our province to basically eliminate the strained power supply in the next decade or more, or a still longer period. In particular, when township enterprises achieve a great development, it is not likely that large power grids will increase supply to them. The most realistic and effective way to solve the contradiction between power supply and demand is to build small thermal power plants. In this way, we will have more power resources, and township enterprises will be developed more rapidly and with better results. We should regard building small thermal power plants as a strategic issue concerning Shandong's economic development and carry it forward. All the counties, townships, and towns which have enough coal and water resources and funds may develop small-scale thermal power plants, and enterprises may also join efforts to run such plants. In this field, the sooner we understand the importance of and start our work, the sooner we will gain the initiative. It should be taken for granted that, from a long-term point of view, the small-scale thermal power plants consume much energy, yield relatively poor economic results, and thus will finally be replaced by large-scale power plants. However such a situation will not emerge in the current period. Many years from now, whether large-scale power grids have the ability to supply sufficient electricity, the small-scale power plants will, like the "five smalls," not only have played their historical role but also may be rebuilt into thermal plants which will help relieve the shortage of power supply to peasants and solve the problem in the centralized power supply of the rural areas.

The key to invigorating town and township enterprises lies in the issue of competent persons. To develop the commodity economy, market competition is inevitable, and it is unavoidable that such a competition will become increasingly more sharp. Competitiveness depends on quality, quality depends on technology and management, and technology and management depend on competent persons. With a person who has a good grasp of technology and management, we will be able to run a plant well; with a good set of rules and regulations, we will be able to create a new situation; and when we design a new product, we will be able to create a hundredfold, thousandfold, output value and occupy a vast expanse of market. There are many such cases. The more a locality develops its economy, the more it feels the shortage of competent persons. A very important reason for this is because it becomes aware of the benefits of competent persons. We have seen the fact that town and township enterprises in Ninghai Town of Muping County have developed to a relatively high level. This town now has more than 100 senior engineers, engineers, and assistant engineers. Such a rich technological force cannot be seen in any other town or township in the province. Even with such a rich force, this town still finds its technological force insufficient, and thus, not only tries every possible means to continually import competent persons but also entrusts various universities to train competent persons for it on a commission basis. The town has also invested 1.26 million yuan in running a training center in coordination with Tianjin University. Facts show that training competent persons have already become an urgent task for developing the rural commodity economy, and in particular for running town and township enterprises, and thus must be regarded as a major task. In addition to continually employing local competent persons, we should pay attention to inviting persons with breadth of vision to collect and train competent persons through various means at various levels so that we can discover and train competent persons in a more extensive manner. Our purpose of running various kinds of schools specializing in economy and management and various kinds of secondary technical schools, as stipulated by documents, is to open up a situation in which competent persons will be trained in many fields.

The readjustment and reform of the agricultural and sideline products processing system and structure have already been explained in the "regulations," and thus will not be repeated here.

By the way, I want to address the issue on the leading bodies of towns and townships. First, we should pay attention to the mass structure and the reasonable distribution of competent persons. Second, we should maintain the steadiness of personnel and should not shift personnel as often as if they were on a merry-go-round.

The reform measures, policies, and stipulations defined by this forum have been formed through many investigations and studies after listening to the people's opinions and through initial survey and weighing the advantages and disadvantages. Therefore, they are in agreement with the guidelines of the party Central Committee's decision on reform and with our province's practical condition. The affairs decided by the provincial party committee and the provincial government should be conscientously implemented by all localities and departments. The problems emerging in the course of implementation should be solved in a proper manner rather than in a perfunctory one.

4. We Should Invigorate Circulation, and Establish a New Market Regulating Mechanism Commensurate With Commodity Economic Development

The present situation in the circulation field is characterized by the fact that it is far from being truly invigorated, by the emergence of many phenomena that should be brought under control or be managed properly, and by the major contradiction of clogged circulation. This also reflects a characteristic in the transition period of economic development. That is, the old systems and patterns are still working, and new systems and patterns have yet to be formed into a coordinated entity. To sum up, when we are making explorations on reform in the circulation field, and studying the establishment of a new market mechanism, we should break with the old systems of monopolized and fixed-quota purchases, and of monopolized and guaranteed marketing, and master the way to apply the law of value, manage markets successfully, and invigorate circulation.

The fundamental way to do a good job in circulation is to unclog lateral channels, reduce intermediate links, and enable producers and buyers to meet directly. More "expressways" should be built and a "through bus" should be run between enterprises, between cities, between urban and rural areas, between prefectures, and between provinces. This requires the elimination of the old circulation systems once and for all. As far as many things are concerned, we are still used to the method of collecting them from thousands of households and then distributing them to thousands of households. If the systems of monopolized and fixed-quota purchases, and of monopolized and guaranteed marketing were necessary in the historical conditions of the 1950's, the situation has greatly changed now, and the quantity of things have increased. If we follow the old method, we will create obstacles to the development of commodity production. We also called for decontrol over some matters, but actually decontrol has not been exercised, and even old channels and old methods were adopted. As has been proven by facts, enterprises that actively opened up lateral channels and met directly with buyers have achieved very good results. For example, the Zaozhuang Woolen Mill and the Dezhou No 1 Cotton Mill have some successful experiences. Their methods should be supported because they represented the orientation of the reform of circulation. Therefore, before we can effect a large-scale reform of systems, we should at least do more work to develop lateral circulation and reduce intermediate links.

Active explorations should be conducted in order to do a good job in circulation, and establish a fairly stable market regulating mechanism corresponding to development of the rural commodity economy. As far as circulation is concerned, decontrol is the premise, and control should also be exercised simultaneously. Decontrol represents reform, and so does control. Their purposes are to enliven circulation and develop the commodity economy. To relax control in order to enliven circulation, and to expand the regulatory role of markets are a trend of development. Last year, we advocated the "5,000 and 50,000" spirit. The purpose was to encourage people to successfully give play to the market regulatory role. Judged from the present situation, having the "5,000 and 50,000" spirit alone is far from enough. We should advance on this basis, meaning that we should both carry forward the "5,000 and 50,000" spirit and organize and guide market regulation so as to reduce disorder to the minimum. It is inconceivable that every plant, every village, every township, and every town of our province send thousands of people to engage in purchasing and marketing. There are some 760,000 township enterprises throughout the province. If every enterprise sends one person, the total number of people sent will be more than 700,000. This will not only lead to a serious waste and low social benefit but also disorder. For a certain period last year, people rushed to buy rabbit hair, mink, dried sweet potatoes, and corn. At first glance, this was conducive to the production of raw materials, but from a long-term point of view, it was not good. Fundamentally speaking, the producers' real benefits are from reasonable goods prices and stable markets but not from grasping markets at the last moment. Not only consumers but producers as well will suffer losses if prices are high one moment and low the next or if markets have a surplus of supplies one moment and are in short supply the next. So, the blind, unstable market situation must not last for a long time. We must conduct reform to organize the markets in a planned manner. That is to say, decontrol does not mean noninterference. The construction of a new market regulation mechanism is a great task. We can also say that it is a project involving all of society. So far, we have no mature experiences in this regard. Examining the province's situation, we came to know that there are at least four problems which all localities are studying for a solution. First, they should establish and perfect in a step-by-step manner the mechanism to coordinate and supervise market goods prices in order to prevent major ups and downs of market prices and to gradually form a flexible and reasonable price system which gives consideration to the interests of raw material producers, processing businessmen, and consumers. When any abnormal situation of goods prices and markets emerges, industrial and commercial departments and price departments must not take old paths by rashly adopting administrative means to interfere with market affairs. The associations for safeguarding the interests of producers and consumers should pay attention to giving play to their coordination and supervisory functions. Second, they should gradually set up the mechanism to give timely and accurate feedback of market information to producers in an effort to guide production with information; to ensure that the quantity, quality, prices, designs, and colors of products better afford with the market demands; and to gradually balance the production and marketing channels. Third, they should plan to popularize the contract system and to organize production in line with contracts. "Contracts" are means to develop the commodity economy; links between production, processing, and marketing; and a guarantee for normal circulation. Without contracts, the implementation of the planned commodity economy will contain blind areas and even create problems. Once the contracts are signed, we should conscientiously abide by them and ensure that the production of some farm and sideline products are in line with contracts. Fourth, relevant departments under the jurisdiction of governments should engage in market regulation and correctly apply the economic lever of goods prices, taxation, and credits to the regulation of production, processing, and consumption.

A question is worth noting here. That is, we must not divorce the construction of the market regulation mechanism suitable for the commodity economy from the old channels such as commercial and supply departments and supply and marketing cooperatives. However, we must conduct reforms in this regard. Major channels cannot be closed by themselves, but their closure should be embodied through work. For instance, supply departments have achieved good results in reform since the beginning of last year, and many good models have emerged. Their work achievements resulted from their good market work. They used to serve state enterprises concentratively in line with their plan in the past; but now, they have expanded the targets and scope of service. They have offered multisided services by expanding their service targets to the entire society, including both planned and unplanned targets, and state, collective, and town and township enterprises. Comrades on supply fronts should regard the work of supporting town and township enterprises as their own duty, and enthusiastically serve these enterprises. I think that supporting town and township enterprises is a manifestation of foresight. Over the past few years, the supply and marketing cooperatives and credit cooperatives have done a great deal of work and have experienced a series of reforms. However, we must affirm that they have scored certain achievements. Viewing the whole situation, the situation of development in particular, the supply and marketing cooperatives and credit cooperatives have not made big strides for reform nor have they explored new ways for reform. Of course, other factors exist as well as some work problems. This problem is not the matter of a certain comrade, but is related to the whole structure. Comrades working for supply and marketing cooperatives and for credit cooperatives should strengthen their sense of urgency in carrying out reform. Instead of carrying out reform of a small scale, various supply and marketing cooperatives and credit cooperatives should adopt hard measures to carry out reform in a fundamental manner. First, they should change them from being run by the government to being run by the people, and join hands with the people to promote the rural economy. Second, by regarding themselves as departments for serving economic organizations at the same level, they should directly link their economic benefits to their service performance. Third, they should successfully implement the economic contracted responsibility system within their units, and closely link duty, rights, and benefits so that the income of every worker and every staff member can truly reflect this managerial efficiency and service quality. With regard to how to carry out reform, the provincial authorities have decided to allow Yantai City to first carry out experiments and then to allow other cities and prefectures to select one of their counties to try out the reform. Comprehensive reform should not be carried out until sufficient experiences are gained. However, this does not mean that those localities which have not been selected to carry out experiments can idly sit by. All localities should carry forward the spirit of reform, do what they can, and reform what they can.

To enliven circulation, we must grasp transport well. Transport is the important means of circulation. To improve transport service, we must first attend to construction and then to management. In particular, it is difficult for the border and remote areas to enliven their circulation if they refuse to improve their transport facilities. Various localities are entertaining high hopes for the reform of various communications departments. Now most localities have asked the province to transfer the provincial-run small ports to pertinent cities, prefectures, and counties for management. The provincial communications department is now working out specific programs for this. When the programs are determined, we must positively put them into effect, and transfer small ports to lower levels as early as possible. In transferring small ports to lower levels, we must do it coordinatedly and thoroughly, rather than retaining some of the power. This will be conducive to the economy and the whole situation. The water transport structure should be reformed, and efforts should also be made to study how to reform the land transport structure. All in all, in reforming the communications structure, we must pay attention to mobilizing the initiative of lower-level departments in running and managing communications facilities in order to suit the development of the commodity economy and the integration of the urban and rural economies. We should make good accounts of social efficiency, study operational research, attend to linear programming, and try our best to reduce unnecessary intermediate blockages.

5. We Should Continue to Strengthen the Primary Industry in Order to Lay a More Solid Foundation and Provide Greater Momentum for Developing the Rural Commodity Economy

The fundamental position of agriculture in the entire national economy is unshakable. This scientific conclusion has been repeatedly proven by historical experience. Along with the development of modern industry and the rise of the tertiary industry, the portion of agricultural output value in the national economy will become smaller and smaller. This is the expression of economic and social progress. However, the reduction in the proportion of agriculture does not reflect a change in its fundamental position. On the contrary, the position of agriculture should be strengthened continually and its absolute value should be increased steadily. Deviating from agriculture, it will be difficult for us to develop town and township enterprises, to enliven circulation, and to engage in various undertakings. So long as we reap a bumper harvest in agriculture, our life will be better. However, there is a problem in agriculture, all economic departments, the people's livelihood, and social stability will be affected. The fairly great development of our township enterprises and other undertakings over the past few years is directly attributed to vigorous agricultural development. Therefore, we should both "stress industry" and "develop agriculture." Comrade Xiaoping said at it will take more than 3 or 5 years to rectify a detour in agriculture. After the 3d Plenary Session of the 11th Party Central Committee, agriculture of our province took the lead in reform, and the achievements were indeed significant. However, this does not mean that there are no problems in agriculture, which is the foundation, agricultural production has its own special characteristics, and is restricted more by natural conditions. Moreover, the returns of agricultural input are limited, the interests of agriculture is comparatively lower than other industries, and therefore agriculture is apt to be left out in the cold. This decides its instability. We should exert great efforts to strengthen it.

First, we should continuously change conditions for agricultural production. Since 1980, investment in agriculture, in water conservation projects in particular, has declined every year. Because of this decline, which should not have occurred, not only did we fail to undertake new large-scale water conservation projects, but also the existing facilities became seriously out of repair, posing a great latent danger. As the central authorities are determined to increase agricultural investment, the province and various localities should also adopt every possible means to allocate more money to improve agricultural capital construction through various channels. At the same time, attention should be paid to labor accumulation. We should encourage and organize peasants to throw more labor into the land, and repair and build some small and medium-sized projects to transform mountains and tame rivers. Counties as well as townships, towns, and villages should proceed from reality and adopt measures to support agricultural development. Paying attention to agricultural development, we should adopt encouraging and supportive policies to lead and mobilize peasants to develop barren hills and waste beaches and water areas. We should also value land. Excessive and arbitrary occupation of farmland has been rather serious over the past few years. If this goes unchecked for a long time, the consequences will be too ghastly to contemplate. Of course, it is impossible to develop various undertakings without occupying any farmland. The key is to strictly enforce the "land law" issued by the state, and that land management departments at all levels should examine and approve farmland utilization strictly to ensure rational use.

Second, we should continue to readjust the rural production setup. Readjustment should be seen as dynamic, that is, readjustment of production setup should be carried out continuously. Readjustment should be oriented to market changes, and an economic structure should be established in which agriculture serves the processing industry and the processing industry serves trade and commerce. No matter how we readjust, we must not neglect grain production because it is the foundation of the foundation. As demanded by the central authorities, our province should achieve self-sufficiency in grain production, neither allocating to outside the province nor asking for distribution by the central authorities. It is not easy to attain this standard, and great efforts should be made. The general principle is to stabilize grain acreage, raise per mu yields, and increase output. Emphasis should be placed on wide application of fine strains, irrigation, application of fertilizer, scientific farming, reform of the farming system, and increase in the multiple crop index.

In addition, there is the question of implementing the "spark plan." The proposal for implementing the "spark plan" in the countryside made by the State Scientific and Technological Commission was a great pioneering work to turn science and technology into actual productive forces. The implementation of the "spark plan" will have a far-reaching impact on overall rural economic development. All localities and relevant departments should pay close attention to this and organize forces to implement the items set forth in the plan.

Third, we should perfect the rural responsibility system and implement the rural economic policies well. In doing the work in this regard, we should pay attention to several trends. Some cadres and peasants have a misunderstanding of and express anxiety over the perfection of the responsibility system which is advocated at present. They think that this advocation is also a call to do something in a massive manner. A situation emerged in some localities in which some contractors gratuitously handed over to the villages their fixed assets worth more than a hundred thousand yuan or several hundred thousand yuan which had been added through development after signing the contracts; and the villages accepted these fixed assets. We must correct these practices since they do not afford with the party's policies. We say that our purpose in developing a cooperative economy is to do our best to combine the various sectors of production, to upgrade productive forces, and to develop the commodity economy. The development of the cooperative economy is different from the practice of organizing cooperatives and the premature transition regardless of poverty which were advocated in the past. Therefore, we should concentrate the perfection of the cooperative system on perfecting the service before, during, and after production on the basis of not changing the basic form of the family-based contract system. We should respect the will of the masses, make the best use of the situation, pay attention to the progress of the work, and stress real results. Instead of stressing a fixed pattern, flexibilities are allowed in carrying out the work.

While developing industry to make up for agricultural losses, we should proceed from reality, seek truth from facts, act according to our ability, and pay special attention to stopping the practices of arbitrarily apportioning expenses from the enterprises and retaining a large portion of the profits to increase the enterprises' burden. Such practices of making up excuses to ask for money from the individually owned industrial and commercial households and the enterprises jointly run by several households after they have delivered the portion of their produce to the higher levels are unreasonable. We must prohibit these practices.

We must also perfect the contract system. We must neither easily change nor tear up halfway the contracts, such as land, forestry and fruit, small water conservation projects, large farm machinery, and grain purchasing contracts. When the contracts must be readjusted, we should make complete consultations, give consideration to the interests of both sides, and handle affairs according to the law. Since many problems in this regard have been reflected one after another and the situation in this regard is very complicated, all localities must regard these problems related to contracts as matters of policy importance, earnestly and conscientiously treat them, and timely and properly handle them according to the contract law and the regulations set forth in relevant policies.

Since the rural work with substantial content is an organic integrated entity involving many fronts, leaders at all levels must "play the piano" well, make overall plans and take all factors into consideration, and guard against the tendency of attending to one thing and losing sight of another. What I have said above concentrates on the material civilization because this is a rural economic work forum. The general demand for the socialist spiritual civilization is also to serve the development of the commodity economy. Only when we make a unified plan for our work and create a relaxed, harmonious social environment can we certainly be able to promote a rapid development of the rural commodity economy.

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CSO: 4007/33

WHEAT PRODUCTION ENCOURAGED

Jinan NONGYE ZHISHI [AGRICULTURAL KNOWLEDGE] in Chinese No 17 5 Sep 86

[Article by Zheng Shoulong [6774 1343 7893], Vice Director of the Shandong Department of Agriculture: "Vigorously Expand Wheat Production, Ensure Steady Growth in Grain Production"]

[Text] Wheat is a crop with high, reliable yields; vigorously developing grain production is of extreme importance in stabilizing steady increases in Shandong's grain production. In 1972 Shandong's total wheat output exceeded 10 billion jin and total grain output exceeded 30 billion jin; in 1983 total wheat output exceeded 20 billion jin and total grain output exceeded 50 billion jin; in 1985 the total output of wheat was close to 30 billion jin and total grain production reached a new level of more than 60 billion jin. This year, due to the correct leadership of the provincial Central Committee and provincial government, wheat production has again attained a bumper harvest, with total production at 31,278,000,000 jin. In order to continue to develop wheat production, from now on we should put special emphasis on the following areas of responsibility.

1. Primarily Stress Per-unit Yields, Increase Total Yields. In this fall's planting, the province as a whole should keep the area steady at 70 million mu, focussing our energy on raising per-unit yields. In order to assure such large wheat field acreage as well as increasing per-unit yields, it is necessary to: 1) do a good job of interplanting wheat and other crops, leaving rows for interplanting and mastering the cultivation management techniques for interplanting, striving to achieve two bumper harvests of wheat and other crops. 2) Vigorously promote dry-land crops agriculture, making use of coordinated dry-land crop technology in soil preparation, fertilizer application, varieties, and management; in arid fields with a thick soil layer, plant wheat, so that medium or even high levels of production can be achieved. 3) Properly plant the late wheat crop. In the past two years, there have been about 15 million mu of late wheat in Shandong; due to improved varieties and breakthroughs in cultivation and management, per-unit yields have been more than 400 jin. Therefore, the emphasis this year on properly planting the late wheat crop is an important measure in stabilizing acreage and increasing per-unit yields.

2. Increase Material Inputs. During the Sixth 5-Year Plan, soil surveys were conducted throughout Shandong, so we are clear about the situation. Every city and prefecture should be sure to use these technical results so that fertilizer is applied in the proper ratios. At present, per-unit wheat yields in Shandong are mostly about 450-500 jin. still medium-level output; the primary measure to improve wheat yields is reliance on increased material inputs, and the main way to properly apply mixed fertilizers is to increase the amount of fertilizer applied and improve the level of fertilizer application.

In increasing material inputs, we should pay attention to the following points: 1) Based on soil survey results or on chemical testing of local soils, each city and prefecture should make reasonable increases in nitrogen, phosphate, potassium, and trace element fertilizers for soils which lack these nutrients. In particular, the desired increases in quantity should be determined by soil fertility conditions and the desired level of production. 2) We should pay great attention to using trace element fertilizers. Both banks of the Huang He and Shandong's shajiang black soil generally lack zinc. Applying 2 jin of zinc fertilizer for each mu can yield relatively large increases in output. 3) The organic content of the soil is an important indicator in determining soil fertility. Therefore, we should pay attention to improving soil fertility, making sure that every year we increase the applications of mud fertilizer and zinc fertilizer and return straw to the soil. 4) With regard to wheat, in increasing the amount of fertilizer we should put emphasis on increasing the amount of base fertilizer. In 1986, Pingdu County in Shandong had 1.17 million mu of wheat; the average applications per mu were 5000 jin of mud fertilizer, 90 jin of chemical fertilizer, and 80 jin of phosphate fertilizer; potassium fertilizer was applied to 810,000 mu and zinc fertilizer to 720,000 mu; the per-unit yield of wheat was 694 jin, for a total output of 810 million jin. For many years Jining city has persistently returned straw to the soil, increasing the organic content of the soil and fully reaping the benefits of increased applications of chemical fertilizer. In 1986, the per-unit yield in the city was 612 jin, the highest per-unit yield for any city in Shandong. 5) Stress the maintenance and linking together of farmland water conservancy projects, promote Zhucheng County's experience with "centralized irrigation," and strive to expand the irrigated wheat acreage. In addition, we should increase the area mechanically tilled and planted; this is the crucial step for the timely completion of this year's fall planting and the improvement of per-unit yields.

3.Provide Leadership for Different Categories, Raise the Level of Scientific Cultivation. The vast expanses of land in Shandong contain a complex variety of soil types. Large numbers of ordinary people and technical officials have arrived at many coordinated technology models and cultivation methods designed for differing soils, climates, and forms of cultivation; for example, developing wheat in medium- and low-yielding fields, cultivation techniques for wheat as a dry-land crop, cultivation techniques for intensive planting and high yields, cultivation techniques for bountiful production of the late wheat crop, expand the area of mechanized tillage and planting and earth and plastic sheet mulches. For this year's fall planting, we should make a great effort to use various forms of education classes, technical lectures, and printing and distribution of "certificates of understanding" to accelerate the widespread promotion of these techniques; when they have been mastered by the masses, they will serve to increase production.

4. Properly Distribute Varieties, Overcome "Too Many, Too Unsystematic, and Too Impure." Improved varieties are an important factor in increasing production. Every locality in Shandong attaches great importance to widespread promotion of improved varieties. Improved varieties of wheat account for more than 90 percent of the acreage, and are of great importance in increasing wheat yields. At present, deserving special attention are: proper distribution of wheat varieties and distinguishing among varieties requiring high levels of fertilizer and water, drought-resistant and -tolerant varieties, early maturing varieties, and late planting varieties, so that variety distribution among various systems is reasonable. New varieties examined, approved, and certified in recent years, such as Lumai No 7, Lumai No 1, Lumai No 8, and Jinmai No 21, should be promoted more rapidly so that they can take effect as soon as possible. We should continue to plant excellent varieties already in use, such as Ji'nan 13 and Changle No 5. We should pay special atention to improving variety purity, striving to overcome the problem of varieties being too many, too unsystematic, and too impure. We should also make sure to not aribitrarily and unsystematically bring in different varieties, frequently changing them, such that in a given area no main variety can be found. Those varieties which have a low level of purity and contain a serious level of impurities cannot be used as seed unless they are cleaned. In order to avoid bringing losses to the masses, varieties which have not undergone experimental and demonstration planting and approval by the province should not be brought in without consideration.

The responsibilities for this fall's planting are many and heavy; we now must stress all aspects of preparatory work. The fall planting plans, preparation of supplies, technical education, distribution of improved varieties, and maintenance of agricultural machines and tools should be accomplished ahead of schedule. Every level of agricultural departments should learn well the models, be good advisers to party committees and the government, vigorously develop wheat production, and ensure steady growth of grain production in Shandong.

12919
CSO: 4007/15

SHANDONG

UN-AIDED SHANDONG AFFORESTATION SCHEME SUCCESS

OW271144 Beijing XINHUA in English 1119 GMT 27 Sep 86

[Text] Jinan, 27 Sep (XINHUA)--Forests are flourishing on the old course of the Yellow River in east China's Shandong Province as the first phase of a UN-aided afforestation project was completed.

The project, first begun in the end of 1982 in Shenxian and Guanxian counties, covers a total of 5,250 hectares of arid and sandy soil and protects 20,000 hectares of farmland from wind erosion.

As a result of the forest shield and the improvement of farming technology, grain output per unit has rose 10 percent each year, according to a local official. Grain crops planted between the trees alone brought about a total of 5.95 million yuan for the local peasants between 1983 and 1985, or 260 yuan for each family.

The 165-kilometer dry river bed dates back 2,000 years, cuts across five counties and cities in the western part of the province, and covers a total area of 34,400 hectares.

Wind erosion of sand and dust would often bury the crops and reduce grain output 1.5 tons per hectare, making the area one of the poorest in the province.

In November of 1982 the Chinese Government and the UN World Food Program signed an agreement to start the afforestation project, the official said.

Between December 1982 and July 1985, the UN program supplied wheat, edible oil and other goods worth U.S. $3.8 million while the Chinese Government invested 7 million yuan (U.S. $1.9 million).

More than 46,000 local residents planted poplar, paulownia, and locust trees on 5,250 hectares and drilled 520 wells to complete phase-one of the afforestation.

Last December the second phase of the project involving afforestation of an additional 6,500 hectares started, the official said. Upon its completion in 1989, about one-third of the arid area will be covered with foliage.

/9599
CSO: 4020/31

EXPORT-ORIENTED AGRICULTURE ENCOURAGED

Shanghai SHANGHAI JINGJI [SHANGHAI'S ECONOMY] in Chinese No 3, 31 May 86 pp 3-6

[Article by Feng Shuchun [6646 2885 2504], Director, Shanghai Municipal Agriculture Committee: "The First Step In Developing Foreign-Exchange-Earning Atriculture Is To Bring Shanghai's Rural Production To New Levels Of High Quality And High Standards"]

[Text] Since the 3rd Plenum of the 11th CPC Central Committee, the first step of reform for Shanghai's villages was the implementation of the output-related contract responsibility system, by which these villages were able to overcome the production defect of "just making noise" and the distribution defect of the "big rice pot". They also exercised unified management which is a superior feature of the collective economy and gradually combined centralized management with localized management This is a two-level cooperative management system that is characteristic of China. At present, the second step of reform is just getting underway. The main objectives of this step are to change the system of unified and assigned agricultural procurement and to adjust the production structure of the rural areas.

How should Shanghai's rural production be restructured? The central government calls for "the development of export bases in coastal and other feasible areas for the production of new agricultural products, special products, and small commodities that will be produced by township and town enterprises in order to develop agriculture which will earn foreign exchange. The first step is to bring rural production to new levels of high quality and high standards." The central government's request shows us clearly the direction of progress; we certainly must vigorously develop foreign exchange-earning agriculture, in order to prepare for the first step of bringing Shanghai's rural production to new levels of high quality and high standards.

Favorable Conditions for Developing Foreign Exchange-Earning Agriculture in Shanghai's Villages

Shanghai's villages are singularly blessed with excellent weather and soil for the development of foreign-exchange-earning agriculture; they have a variety of favorable conditions and broad prospects for development.

1. Quite Good Foundation in Exporting and Earning Foreign Exchange

Shanghai's villages currently have 616 units specializing in producing products for foreign export; there are more than 370 types of products. Among these are 7 main categories and almost 70 varieties of exported agricultural products, by-products, and goods processed from them. Many agricultural products have a fairly good foundation in exporting and earning foreign exchange. For example, Xiaohu sheep skins have been exported for 100 years; last year, more than 100,000 Xiaohu sheep skins and goat and mink skins were exported. Garlic has been exported from Jiading County for 70 years; last year exports were as high as 11,152 tons. Tacai and other fresh vegetables have also been exported for 60 years; last year more than 800 tons of fresh vegetables were exported, including more than 100 tons of wild rice stem from Liantang Township in Qingpu County. Shanghai's villages also have a fairly good foundation for producing and exporting edible fungi, possessing China's only research institute specializing in edible fungi; last year they exported 3,715 tons of mushroom packed in salt water, dried mushroom slices, straw mushroom packed in salt water, ping mushroom packed in salt water, dried xianggu mushroom, houtou mushroom, etc.

2. Excellent Geographical Environment

Shanghai's villages are right beside China's largest port, the Shanghai port, and the international airport, making transport for foreign trade convenient and quick, especially to Japan, which is only separated from Shanghai by a body of water. Compared with the interior, which in developing foreign trade must contend with the time lag and distance lag, Shanghai has the advantage. This is extremely favorable to the export of agricultural products and by-products; it is particularly favorable to the export of living and quick-frozen agricultural products and by-products to Japan. Last year Japan imported $5 billion worth of local and animal products, but only 10 percent of these came from China. Shanghai's villages not only have favorable conditions for the export of local and animal products to Japan, there are also broad prospects for future development.

3. Abundant Natural Resources

Most of the areas in which Shanghai's villages are located have been dry land for 4,000 to 5,000 years. Positioned on the northern edge of the subtropics, facing the sea and the Chang Jiang, the area has fertile soil and abundant rainfall, making it suited to the growth of many crops. In addition, the port was opened quite early, numerous good domestic and foreign varieties are at home here, and there are more than 100 varieties of famous, local, and special agricultural products and by-products. At present there are 80 types of vegetables, more than anywhere else in the world. Shanghai also has 463 km of coastline and 900,000 mu of beaches, which are bountiful resources for earning foreign exchange. Zhelin Township in Fengxian County has enclosed 5,000 mu of tideland to raise prawns. Last year they exported 400 tons of prawns, earning $2 million in foreign exchange. Last winter and this spring they have enclosed another 2,300 mu of tideland to develop the raising of prawns; there is good hope for further growth in the development of prawn raising and in prawn exports.

4. Business Advantage

Shanghai has a rather long history of foreign trade, the necessary institutions are all there, information is readily available, there is abundant experience, it has a good reputation, and around the world there more than 10,000 frequently contacted customers. Food import-export companies, which have intimate ties with agriculture, have trade contacts with 74 countries, and there are 768 frequently contacted customers. Of foreign trade export products produced in Shanghai's villages, 82.6 percent are directly connected with foreign trade units. Shanghai's villages have also joined with various foreign trade companies to form more than 40 enterprises jointly run by the villages and foreign trade companies, which is of even greater benefit to the foreign trade and export of Shanghai rural products.

5. Vigorous Support from Large Industry and Abundant S & T Forces in the City

Shanghai's villages have support from industry and S & T forces in Shanghai, China's largest city, which is of great advantage in developing foreign exchange-earning agriculture. Shanghai currently has 7 large-scale food processing enterprises, 11 vegetable dehydration processing plants, and 2 quick-frozen vegetable plants. In order to develop the export of agricultural products, by-products, and goods processed from them, Zhelin Township in Fengxian County and Malu Township in Jiading County, with the support of large industry and S & T forces in the city, have imported technology and equipment and are currently setting up new quick-frozen enterprises. Exports last year from Shanghai's villages of unprocessed and processed products in the food category reached more than $80 million; this would have been impossible without the assistance of urban industry and S & T forces. This is also the economic and technical advantage that the suburbs of Shanghai have in developing foreign-exchange-earning agriculture.

Initial Success in the Development of Foreign Exchange-Earning Agriculture and the Effect It is Having

In the past few years, foreign-exchange-earning agriculture in Shanghai's villages has been continually growing in the midst of reform. In 1985, ten of Shanghai's suburban counties produced export products worth a total of 1,651,000,000 yuan, a 460 percent increase over the 293 million yuan in 1978, before the 3rd Plenum of the 11th Central Committee. In the supply of goods for Shanghai's foreign trade and export products, the proportion of supplies provided by the suburbs is ever increasing; in 1978 it was 5.9 percent; in 1980, 9.6 percent; by 1985 it had reached 19.3 percent. Of the foreign trade and export goods produced last year in the suburbs, agricultural products and by-products were worth 277 million yuan, 200 percent growth over 1978. Adding on 91 million yuan for processed goods from agriculture sideline industry and 152 million yuan for drawnwork, embroidery, and other craft items, the total is 520 million yuan. Other types of rural export products are clothing, toys, hardware, and other small commodities. Of these, clothing, textiles, and knit goods were worth 554 million yuan, and toys and hardware were worth 111 million yuan. These export products were supplied by township and town enterprises. Therefore, for Shanghai's villages to develop foreign exchange-earning agriculture, they must attach great importance to exporting agricultural products, by-products, and goods processed from them, and they must be sure not to neglect the production by township and town enterprises of foreign-exchange-earning export products.

The development of foreign-exchange-earning agriculture is playing an ever increasing role in the stable development of Shanghai's agriculture, reviving the economy of the suburbs, and advancing the modernization of agriculture.

1. Improve the Comprehensive Economic Results of Agriculture, Take Fundamental Measures to Prevent Decline of Agriculture

The development of foreign-exchange-earning agriculture in itself has rather high economic results, but it also promotes the integration of crop production, animal husbandry, and processing, raising the comprehensive economic results of agriculture. Although in one year Shanghai only exports over 40,000 tons of vegetables and salted, dehydrated, quick-frozen, and canned vegetables, this can earn $30 million; the comprehensive economic results are very high. According to a survey in Xinqiao Township in Songjiang County, the peasant's net income from raising each chicken was originally 0.8 to 1 yuan. Due to the growth of processing and exports, the township meat and food plant recovers a profit of 0.32 yuan per chicken for the chicken-raising units, raising the net income for chicken farmers by more than one-third. In this way, the agricultural economic results can be improved, fundamentally raising the enthusiasm for engaging in agriculture and promoting the stable growth of agriculture.

2. Accelerate the Technical Transformation of Agriculture, Promote Specialized, Commodity-Oriented, and Modernized Agriculture

Developing foreign exchange-earning agriculture with the goal of selling products on the international market requires technical innovation and improved product quality, as well as active importing of new varieties, new technology, and new equipment; this will then benefit the acceleration of agriculture's technical transformation and the promotion of specialized, commodity-oriented, and modernized agriculture. Take for example the Great River Company Ltd, a joint venture of Songjiang County and the Zhengda Group of Thailand: due to the importation of good broiler varieties and advanced feed formula processing technology, and the implementation of specialized, commodity-oriented, and modernized production, they have raised the quality of the chicken meat, shortened the breeding cycle, and reduced the proportion of feed to meat output, thereby having an important effect on the variety improvement and technical transformation of the suburban chicken industry.

3. Developing Foreign Exchange-Earning Agriculture and Exporting More Promotes the Importation of New Technology and New Equipment for Agriculture

The key to implementing opening to the outside world and making greater use of foreign capital and imported technology is increasing exports and earning more foreign exchange. Exports are the basis for imports; without exports, there can be no imports; imports benefit further exports. In the past few years, Shanghai's villages have imported several dozen new products, new techniques, and new equipment, such as new varieties of farm animals, quick-freezing equipment, dairy processing equipment, and Western suit and light bulb production assembly lines; all of these are inseparable from the development of foreign-exchange-earning agriculture.

4. Promote the Conversion of the Suburban Economy from Domestic-Orientation to Export-Orientation

In 1985, Shanghai's villages produced 1,651,000,000 yuan worth of export products, accounting for 10.5 percent of the gross value of all industrial and agricultural output in the suburbs. In some townships, export goods account for roughly 30 percent of the gross output value. Malu Township in Jiading County has 18 products which have entered the international market; the total value of the exported goods is more than 30 million yuan. Last year the Jiangzhen Silk Clothing Factory in Chuansha County and the White Crane Clothing Factory in Qingpu County each earned more than $10 million in foreign exchange. The development of foreign-exchange-earning agriculture helps both the further restructuring of production in Shanghai's villages in accordance with the needs of the domestic and foreign markets, and the accelerated re-orientation of the suburban economy towards export markets.

5. Developing Foreign Exchange-Earning Agriculture Benefits "Importing from Abroad and Cooperation with Units in the Interior," Promotes Diffusion and Transfer of Advanced Technology into Interior

"Importing from abroad and cooperation with units in the interior" is the expectation and demand of the central government toward the economic open areas along the coast, as well as being an important task in the development of foreign-exchange-earning agriculture. In the process of developing foreign exchange-earning agriculture, the suburbs are now building or are preparing to build four agricultural sideline industry bases which will "import from abroad and cooperate with units in the interior": the first is the Chinese-Thai joint venture mentioned above, the Great River Company Ltd., which deals in broiler feed, raising broilers, processing, and export; the second is the Chinese-American jointly-funded enterprise which grows, processes, and exports sweet corn; the third is the Chinese-Belgian joint venture which deals in lean swine feed, swine-raising, processing, and export; the fourth is the Chinese-Japanese joint venture which produces, processes, and exports vegetables. These Chinese-foreign joint ventures have already imported and are preparing to import new varieties and new technology; after being digested and absorbed, they will be broadly diffused and transferred to the interior. At present the suburbs have approved the setting up of 30 Chinese-foreign joint and cooperative ventures and 22 compensation trade deals; these will play an important role in "importing from abroad and cooperation with units in the interior."

Several Problems Which Must Be Solved In Order To Accelerate Development of Foreign Exchange-Earning Agriculture

In order to accelerate the development of foreign-exchange-earning agriculture in Shanghai's suburbs, we must further resolve the following problems:

1. Correctly Handle the Relationship Between the "Two Reliances" and the Development of Foreign Exchange-Earning Agriculture

The municipal party committee was entirely correct in stating the guiding ideology that "peasants in the suburbs should rely on themselves to provide their grain ration, the city should rely on the suburbs for supply of the main nonstaple foodstuffs"; this ideology is derived from the actual situation in Shanghai. At the same time, the municipal party committee also emphasized that, based on the stability of the two points of reliance, we should actively develop foreign trade and exports. For this reason, we cannot regard "two points of reliance" as conflicting with the development of foreign exchange-earning agriculture. "Two points of reliance" is not self-sufficiency, and developing foreign-exchange-earning agriculture is not a denial of serving the city; we cannot talk in vague terms about "foreign trade being subordinate to domestic trade" or "domestic trade being subordinate to foreign trade"; the key is to pay attention to the links between the domestic and foreign trade markets and to make appropriate arrangements for the Shanghai market. As Shanghai develops complete openness to the rest of China and the outside world, the suburbs should, on the basis of persisting to serve the city, sell agricultural products on the international market as much as possible, gaining more exports and earning more foreign exchange; on the other hand, they should actively attract interior agricultural products into the Shanghai market. From now on, agricultural products from Shanghai's suburbs should succeed by virtue of quality. Developing foreign-exchange-earning agriculture can foster the rapid improvment of product quality. Thus this also is in accord with the development strategy for Shanghai's agriculture.

2. Through Overall Planning, Gradually Establish and Develop Foreign Trade Export Bases Which Integrate "Crop Production, Animal Husbandry, and Processing" and "Foreign Trade, Processing, and Agriculture"

At present, foreign trade and exports primarily take four forms in Shanghai's suburbs: the first is agricultural-trade linkage - foreign trade departments set up offices in suburban counties to organize the production of export products; the second is agricultural-trade joint operations - agricultural and foreign trade departments jointly run enterprises; the third is indirect export, providing to city food plants the raw materials for export food products; the fourth is Chinese-foreign joint cooperative ventures and compensation trade. From now on, while we are continuing to use a variety of methods to develop foreign-exchange-earning agriculture, we should focus on exporting staple commodities and, systematically and step by step, establish foreign trade and export bases which integrate crop production, animal husbandry, and processing and bring together foreign trade, processing, and agriculture, in order to benefit overall arrangements for trade in domestic and foreign markets and to help improve the results of scale and the comprehensive economic results in agriculture. According to initial testing in Qingpu County, the feathers from one duck are worth 0.80 yuan as raw material; after limited processing they are worth 1.60 yuan, and after multiple processing, 3.20 yuan; if further processed into down clothing, the value can still double. Increasing value through processing is one of the essential roads to follow in agricultural development. The current situation with regard to exports of agricultural products from the suburbs is that areas with relatively good foundations in 10 varieties of products, such as vegetables, edible fungi, meat products, garlic, rabbit hair, and down, are to varying degrees implementing the integration of "crop production, animal husbandry, and processing" and the bringing together of "foreign trade, processing, and agriculture." From now on, every county and township should take advantage of its local strengths and gradually establish a number of foreign trade and export bases which, on varying scales, with a variety of forms, and each having its own characteristics, will integrate "crop production, animal husbandry, and processing" and bring together "foreign trade, processing, and agriculture."

3. Depend on S & T for Progress, Increase Capital Construction for Foreign Exchange-Earning Agriculture

Depending on S & T is crucial to the further development of the rural economy and is even more crucial to the development of foreign exchange-earning agriculture. Comrade [Deng] Xiaoping has stated: whether or not exports can be increased essentially depends on, firstly, products being "new," secondly, on quality being "high," and thirdly, on the price being "low." For all of these we must rely on S & T progress. Otherwise, it will be difficult for products to break into the international market: even if products are exported, if the foreign exchange earned is too little, it is not worth the effort; traditional export products may also fail in competition. Therefore, scientific research departments should take careful aim at the international market and, by relying on progress in S & T, actively help agriculture raise the quality of export goods; they should also research and develop famous, special, new, rare, excellent, and unusual good varieties with which to enter the international market. At the same time, we should depend on progress in S & T to increase capital construction in foreign-exchange-earning agriculture. For example, in developing exports of prawns and river crabs, the key problem is the lack of prawn and crab larvae. The solution is to establish bases for the artificial breeding of prawn and crab larvae. It has already been decided to invest more than 6 million yuan in building such a base; the possible annual output would be 100 million prawn larvae and 500 kg of crab larvae; this would replace the need for 10,000 mu of prawn breeding grounds and 50 percent of the water area in all the suburbs for raising crab larvae. The principal problem currently affecting large-scale exports of flowers is that of quality; it is thus necessary to build modernized greenhouses in which the temperature, light, water, and air can be controlled, so that we can meet the quality and time requirements of the international flower market. Relying on progress in S & T and increasing capital construction: this is the major problem requiring urgent solution in order to develop foreign-exchange-earning agriculture.

4. Formulate Preferential Policies, Encourage and Support the Development of Foreign Exchange-Earning Agriculture

Generally speaking, in developing foreign-exchange-earning agriculture, the investment is quite large and recovery period is quite long. For example, building modernized greenhouses and setting up quick-frozen vegetable plants both require enormous investments and also need more than 10 years before the investment can be recovered. It is therefore necessary to formulate preferential policies and muster support from every quarter. Financial and monetary departments should give to capital construction for foreign exchange-earning agriculture certain economic subsidies and loans with no interest, low interest, or subsidized interest; tax departments should reduce or cancel the taxes on enterprises processing and exporting agricultural products; materials departments should supply at preferential and favorable terms goods needed to develop foreign-exchange-earning agriculture; foreign trade departments should allow units which produce export products or which provide supplies for export goods, regardless of whether they directly or indirectly export, to keep a certain amount of foreign exchange; in addition, units which do a good job of exporting and earning foreign exchange should receive special prizes to encourage them to export more and earn more foreign exchange.

5. Reform the Foreign Trade System, Further Strengthen the Ties and Cooperation Between Agriculture and Trade

In the process of developing foreign-exchange-earning agriculture in the suburbs, foreign trade departments are playing an active role. But sometimes there still is not sufficient contact. Agricultural departments do not have a sufficient grasp of international market information, influencing to a certain extent the development of foreign-exchange-earning agriculture. In order to solve this problem, foreign trade departments and agricultural departments should, on the one hand, jointly set up a small but efficient organization which through close cooperation will strengthen the collection, study, processing, transmission, and feedback of foreign trade information, in order to promptly organize and guide the production of export products. On the other hand, they should continue to actively develop enterprises jointly run by trade and agriculture, fully making use of the initiative in both agricultural and foreign trade departments. At the same time, on the basis of further perfection of the price system, foreign trade departments should gradually implement a system of representation, enabling the interests of foreign trade departments and units producing export goods to be brought even closer together, thereby promoting the ability of foreign-exchange-earning agriculture to develop at a faster rate.

12919
CSO:4007/16

BRIEFS

RURAL SAVINGS--Based on statistics of the Shanghai Branch of the Agricultural Bank, in the first 8 months of the year saving deposits in Shanghai's suburban districts increased 770 million yuan. As of the end of August, total deposits were 2,331,690,000 yuan, and per capita savings were 449 yuan. [Excerpts] [Zhengzhou ZHONGGUO CHENGXIANG XINXI BAO in Chinese 28 Sep 86 p 1]

CSO: 4007/50

SHANXI

BRIEFS

RURAL SAVINGS--As of the end of August, rural savings in Shanxi amounted to 3,079,880,000 yuan, a net increase of 490,630,000 yuan since the beginning of the year. Per capita savings were 147.43 yuan, a net increase of 33.48 yuan over the beginning of the year. [Text] [Taiyuan SHANXI NONGMIN in Chinese 2 Oct 86 p 1]

CSO: 4007/43

SICHUAN TO DREDGE ANCIENT IRRIGATION SYSTEM

OW251333 Beijing XINHUA in English 1321 GMT 25 Sep 86

[Text] Chengdu, 25 Sep (XINHUA)--The authorities in Sichuan Province have decided to dredge a 2,000-year-old huge water conservancy project, a local official said today.

The whole dredging project needs 72 million yuan (U.S. $19.5 million) and the provincial government has allocated 11 million yuan (U.S. $2.9 million) to clean out one floodgate, a key water control of the whole system, and to extend a 10-kilometer canal. Work will start this winter or next spring.

As a result, current water velocity will double to 150 cubic meters per second. This will greatly cease water shortage in Chengdu, capital of Sichuan Province, and areas around it, the official said.

The ancient project, known as the Dujiang Dam, was built during the warring states (475-221 B.C.). It has been since kept functioning but the irrigated acreage covered by it was reduced to no more than 134,000 hectares in the 1950's. This figure has been quadrupled thanks to constant maintenance in the past 30 years and more.

But because of silt blockage and other damages, it could hardly meet the increasing demand of its irrigation area.

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CSO: 4020/31

SICHUAN

BRIEFS

SICHUAN GOOD HARVESTS--Sichuan has reaped good harvests this year despite natural disasters. According to statistics, the spring grain harvest increased by 290 million kg over last year, a rise of 3.7 percent. Early rice output increased by 70 percent [as heard] over last year. Yields of mid-season rice and single-crop late rice have improved. In addition, the area of late autumn grain crops is greater than last year. It is hoped that total grain output over the year will show an increase over last year, and that this will be one of the province's best years. Output of cotton, sugarcane, jute, and bluish dogbane has dropped, but that of oil-bearing crops, fruit, tea, ramie, and tobacco has increased. The number of pigs marketed in the first half of the year showed an increase of 3.14 million over the same period last year, while output value of township enterprises rose by 24 percent. A sample survey shows that average cash incomes for the peasants rose by 8.75 percent. [Summary] [Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 30 Sep 86 HK] /9599

CSO: 4007/44

YUNNAN

CANE SUGAR POLICIES DISCUSSED

Kunming YUNNAN RIBAO in Chinese 5 Sept 86 p 3

[Article by Qian Desan [6929 1795 0003], Yunnan Provincial Planning Committee: "Problems Encountered in Developing Excellent Cane Sugar Resources and Policies to Counter Them"]

[Text] Yunnan now has more than 1.2 million mu of sugar cane, total output of 4,798,000 tons, and almost 2 million people engaged in cane sugar production, making it one of the major industries in Yunnan.

Before 1955, Yunnan did not have a machine-processed white sugar refinery. Since the 3rd Plenum of the 11th Central Committee of the CPC, there has been large growth in the cane sugar industry, so that now there are 60 machine-processed white sugar refineries and 32 brown sugar refineries as well as some brown sugar refineries run by townships and towns; they daily process more than 53,000 tons of sugar cane. Since the 3rd Plenum of the 11th Central Committee of the CPC, cane sugar production has increased 333,000 tons, a three and a half-fold increase over the period before the 3rd Plenum of the 11th Central Committee of the CPC. The key factor in this rapid growth in the cane sugar industry are the decisive strategies and the series of correct policies made by provincial leaders in regard to expanding the cane sugar industry.

The overall development of Yunnan's cane sugar industry is in good shape, but on the road forward we are meeting a few rather difficult problems. The first is the depressed market, the decline in the international sugar price, and the definite effect that imported sugar has on cane sugar production. The second is the low economic results in the cane sugar industry, low per-unit yields of sugarcane, and low sugar rates - this pressing season each ton of sugar has required almost 3 mu of cane fields; in addition, in recent years sugar refineries have been built too quickly, so that the development of cane sources has not kept up with the development of the sugar processing industry. The average usage rate of sugar refineries during this pressing season was only about 88 percent, affecting the achievement of economic results in the sugar processing industry. There are also some sugar refineries which are poorly managed and have declining profits; there have been 10 sugar refineries running at a deficit, which affects the enthusiasm for managing enterprises. The third problem is that the cane sugar industry management system is ill suited to the needs of modern market changes and competition. Planting cane, processing sugar, and circulation are inherently connected, but the reality of the management system is such that the economic interests of each are separated; cane farmers sell sugarcane to sugar refineries, sugar refineries then sell the sugar to commercial warehouses. The three partners in this industry each control their own segment, without any economic rights and interests binding them together. This type of management system cannot cope with the demands of society-oriented large production, nor can it meet the need to compete in the modern market. Furthermore, it is possible that it will become a factor limiting further growth in the cane sugar industry.

In order to deal with the problems now facing cane sugar production, I feel that we should take the following policy steps: first, we should use the spirit and vision of reform to adjust every department in the cane sugar industry and the assignment of interests to each link, so as to better stimulate the enthusiasm of the four parties: cane farmers, sugar refineries, commerce, and prefectures and counties. Each department should make the interest of the entire industry the basis of its own decision-making. Second, we must face the insufficient supply of cane and the difficulty refineries have in repaying debts and interest due to low profits; the sugar industry in Yunnan should adopt the overall policy of consolidation, improvement, use, and multiple processing. In general, we should not build more refineries in the immediate future, but rather strive to allow the existing sugar refineries to "eat their fill" and "eat well," raise the sugar content of the cane, lower cane consumption, lower costs, raise the level of profits; strive to improve the per-unit yields of sugarcane, increase the income of cane farmers; use ingenuity to develop comprehensive use of byproducts of the sugar processing industry and improve the economic results of sugar refineries; make wide use of tropical natural resources to develop intensive processing, develop series of products converted from sugar,and gradually realize the simultaneous sale of raw sugar and sugar products. These measures will undoubtedly achieve good results in meeting the needs of society and strengthening the market competitive ability of the sugar industry. Therefore, the development strategy for Yunnan's cane sugar industry lies in striving to develop a series of sugar products which, in their depth and breadth, will take full advantage of our excellent tropical natural resources and which will be very competitive; furthermore, we should gradually establish large cane sugar industry bases, focussing on cane sugar, which will consist of fairly complete and integrated industries such as candy, cakes, beverages, paper-making, packaging, and candy machine manufacturing. These bases should become a decisive economic bulwark of Yunnan's economy.

12919
CSO:4007/15

ZHEJIANG

BRIEFS

FARMERS TAKE UP FULL-TIME JOBS--Hangzhou, 16 Oct (XINHUA)--Half of the farmers in Zhejiang province in east China have given up full-time care of their fields for more lucrative factory or service work since the rural reform began in 1979, officials said today. Nine million people have taken up full-time plowing, irrigation and transportation work in 64,000 locally-owned labor service units, in industrial enterprises and as peddlers. Overall, according to the officials, more than 1.5 million people have given up farming their own plots to provide all kinds of services for other peasants. Many of those with full-time factory jobs continue to work on their family's farmland. To help them, some rural factories have organized special teams of worker-farmers who do field work for employees who concentrate on factory production. [Text] [Beijing XINHUA in English 0741 GMT 16 Oct 86 OW] /12624

ANIMAL HUSBANDRY DEVELOPS--Based on August statistics, the number of pigs in the province were 14,225,000, an increase of 8.82 percent over the same period last year. Sows numbered nearly 1 million, an increase of 11.45 percent over the same period last year. From January to August, 8,060,000 pigs were slaughtered, an increase of 13.25 percent over the same period last year. As of the end of August, there were 90,340,000 head of poultry in the province, a 12.28 percent increase over the same period last year. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 2 Oct 86 p 1]

TIMBER SHORTAGE--As of the end of June, timber reserves in the province dropped to 360,000 cubic meters, a 28 percent decline since the beginning of the year, and market prices have increased 10 to 20 percent. The major reasons are: 1) Timber imports have declined. It is estimated that the province will only import 300,000 cubic meters of timber this year, a 34.8 percent decrease over last year. 2) Domestic production has declined. Forestry regions in the south have improved forestry management, and have controlled the volume of trees cut. It is estimated that 200,000 cubic meters of timber will be transferred from other provinces, a decline of 150,000 cubic meters over last year. Zhejiang has produced 2 million cubic meters of timber, a decline of 200,000 cubic meters over last year. 3) Demand for timber in rural markets has increased. 4) Demand for timber in construction projects is higher than last year. [Excerpts] [Beijing NONGMIN RIBAO in Chinese 9 Oct 86 p 2]

CSO: 4007/43

END

JPRS-CAG-86-040

10 DECEMBER 1986

China Report

AGRICULTURE

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ECOLOGIST ON RATIONAL DEVELOPMENT, RESOURCES

OW050836 Beijing XINHUA in English 0757 GMT 5 Nov 86

[Text] Beijing, 5 November (XINHUA)--A noted Chinese ecologist called for the rational development and use of natural resources by viewing the situation in terms of both the environment and the economy.

Ma Shijun, member of the World Environment and Development Committee, was quoted by today's PEOPLE'S DAILY as saying, "China, like many countries, is faced with problems of natural resources, environment and economy." "If we cannot properly solve these problems, we will have economic recession," he noted.

"In viewing the whole situation," the ecologist, who is not in his seventies said, "one should understand the inter-relation of all integral parts. The economy cannot steadily develop without the dependable supply of natural resources."

"China has undergone great economic changes since 1979, when it began nationwide economic reform," Ma said. "But many people still follow traditional ways by putting undue emphasis on production and output value and paying attention only to local and present benefits, while neglecting the overall and long-term interests of the people."

According to a statistical report, 11.4 percent of China's territory is desert and sandy wasteland, and 46.6 million hectares of grasslands have been lost because of vegetation destruction.

Reforestation has not yet caught up with logging in China, according to the ecologist, and a total of 2.1 million hectares of forest areas are destroyed each year.

The overuse of chemical fertilizers and improper irrigation have caused soil quality to decrease, and a great deal of farmland is polluted by raw industrial waste water being discharged into rivers and lakes.

The ecologist urged people to view the whole situation and to make comprehensive use and development of the natural resources in order to benefit future generations.

/12913
CSO: 4020/43

PRC TRYING TO HALT SOUTHWARD ADVANCE OF DESERT

HK030402 Hong Kong AFP in English 0340 GMT 3 Nov 86

[By Bernard Degioanni]

[Text] Jiayuguan, China, 3 November, (AFP)--Chinese scientists are struggling to halt the advance of the shifting sands whose steady march threatens to turn vast stretches of north China into a barren wasteland.

The Chinese press has voiced concern about the expanding deserts, blaming the problem in part on policies carried out during the Cultural Revolution (1966-1976) and warned that if measures are not taken Beijing will be completely covered by sand in 200 years.

Scientists at the forefront of attempts to combat the problem in north China, where a sixth of the land is desert, echo these sentiments, and still see desertification as a major problem despite the 1978 launch of the first serious campaign against the spreading sands.

"Since that date, the sand continues to advance by 7 metres (23 feet) a year against 20 metres (66 feet) in 1949," said Di Xingmin, director of a research centre in the Gansu provincial capital of Lanzhou studying ways to control desertification.

Today some 11 percent of China's total area of about 9,560,000 square kilometres (3,824,400 square miles) is under desert.

The largest stretches are the sands of the Taklamakan Desert, covering some 327,500 square kilometres (131,000 square miles) to the north of the Tibetan mountain ranges, and the vast Gobi Desert which covers 1,036,000 square kilometres (414,400 square-miles) in north China and Mongolia.

One expert based near this dusty town where the Great Wall starts its meandering course across north China said the desert simply skirts such obstacles in its determined push toward new frontiers.

"Here we are on the Silk Road, which Marco Polo followed some 600 years ago," the expert said proudly, and ancient towers and walls are testimony that people once lived in the hostile desert near here.

"Nothing can really have changed," he added. Occasional tufts of dry grass and skeletal shrubs mark the boundary, for now, of the vast stretches of sand which shift ceaselessly in the gusting wind.

In Gansu's Jiuquan Prefecture, which encompasses Jiayuguan and 94 villages, 95 percent of the surface area--a million hectares (2.47 million acres)--is covered by desert of mountains.

The remaining 5 percent consists of oases, which for the most part suffer a shortage of water.

Some 35 million people live in northwest China, the people Mr Di says are the key to solving or controlling the problem. "The people are the indispensable support of every campaign, of every effort to end desertification," he said.

"When people lived in small tribes, the natural environment was spared," he said. But with Mao Zedong's encouragement of an accelerated birth rate in the 1950's, population density soared, causing social problems and helping the desert.

"Since then, desertification has accelerated with destructive clearing and the anarchic exploitation of the subsoil," an expert at Lanzhou said.

Blaming the Cultural Revolution for the problem, the Chinese press last year lamented that even trees planted to arrest the sand's march were regarded as a product of "revisionism" and largely destroyed.

Today China has embarked on an ambitious programme, with research stations in Gansu and Inner Mongolia studying sand movements, the development of agriculture in desert areas, and chemical solutions to the problems.

"To control the advance of the desert is now possible. But to eliminate it is impossible. At best it would take at least a century to achieve," said Tun Lizhong, an engineer at the Lanzhou Centre.

Methods used by the researchers including planting plots of dead vegetation over large areas of sand to prevent it from moving. "But even if it's not too expensive, this method requires a lot of manpower," an expert here said.

The sand has also been covered with gravel and tar to stop it shifting, but these two methods are too costly, the expert said.

Since March 1982 peasants in China's northern desert areas have been prohibited from chopping down trees to feed their stoves, and those who break the law are liable to a fine. "It's a deterrent in a region where people are poor," an expert said.

"But the situation is not simple. With sand storms blowing at least 80 days a year, it's sometimes hard to have faith in the projects you embark on," an official at Lanzhou said.

/12232
CSO: 4020/39

PROBLEMS IN VETERINARY MEDICINE DISCUSSED

Beijing NONGMIN RIBAO in Chinese 1 Apr 86 p 2

[Article by Zhang Jianping [1728 1696 1627] and Wang Jingbao [3769 0079 1405]: "Pressing Problems in China's Veterinary Medicine"]

[Text] These reporters recently learned from the work conference convened by the Ministry of Agriculture, Animal Husbandry and Fishery to implement the Regulations Governing Livestock and Poultry Disease Prevention that, even though China's veterinary medical work has registered considerable progress in the last few years, the new political and economic environment has created new problems in disease prevention and treatment and that it is urgent that we increase our understanding of and resolve these problems.

Prevention work has not been fully carried out for many years, and thus we have failed to eradicate a number of livestock and poultry diseases. Some regions, moreover, have misinterpreted reforms and the responsibility system and taken the policy to eliminate "eating out of the same big pot" to mean lone-rangerism, which proclivities have resulted in full or partial paralysis or even dismantling of veterinary stations in some towns and townships. In some provinces the number of paralyzed or semi-paralyzed basic-level veterinary stations has reached 20 to 30 percent of the total, and in a few provinces the ratio has reached over one-half. These stations used to be collective in nature, and the work and livelihood of their employees depended on remuneration for the services rendered. But some regions misinterpreted the central government's policy to reduce peasant burdens and canceled contracts for remunerated technical services, which move dealt a big blow to the stations. Institutional instability and instability and anxiety among employees have made veterinary work difficult to carry out and led to a reduction in innoculation frequency. And disease prevention and quarantine agencies, personnel and testing procedures lack the quality required for commercial animal husbandry production, resulting in new outbreaks of epidemic disease in some regions. In addition, to ensure quality in China's livestock and poultry products, we must conscientiously prevent the spread of animal and fowl disease from abroad and strengthen quarantine of imported livestock and poultry. This work affects the growth of China's animal husbandry industry and the physical health of her people and warrants careful attention from relevant departments.

The quality of veterinary drugs is also a big problem. Nationally, too many of these drugs are substandard. Most serious is the fact that some people have taken advantage of economic liberalization to counterfeit drugs and to pass off inferior medicines as good ones. According to incomplete statistics, 700 types of counterfeit veterinary drugs have been uncovered in recent years, which problem disrupts veterinary work, causes serious economic loss and produces harmful effects among the masses.

China now has 360,000-plus people engaged in livestock and poultry veterinary work, but only one-fifth of this personnel has received specialized secondary, college or higher levels of education, and the number of people specializing in veterinary drugs is especially small, accounting for less than one ten-thousandth of the total. The low quality of veterinary personnel poses a serious impediment to the smooth development of disease prevention and quarantine work.

Thus we suggest that relevant departments strengthen leadership over veterinary work, conscientiously enforce relevant laws and regulations and ensure that laws are obeyed and infractions punished. In addition, we must increase awareness; effectively carry out veterinary work; guarantee access to needed human, financial and material resources; and conscientiously strengthen construction of facilities and training of personnel for disease prevention and eradication. We must also arrange production of veterinary drugs and equipment, establish better disease and drug monitoring and testing systems and reform the disease prevention and eradication system.

12431
CSO: 4007/387

NATIONAL

XINHUA CITES RENMIN RIBAO ON AGRICULTURE

OW031804 Beijing XINHUA in English 1518 GMT 3 Nov 86

[Text] Beijing, 3 November (XINHUA)--The PEOPLE'S DAILY called for boosting agricultural output today, describing it as a "vital issue" confronting China.

In an article by its correspondent, Chen Jian, the paper said China should have no technical problem with raising its average grain output to about 4 tons per hectare since many counties produce more than 7.5 tons per hectare.

But the record average grain output harvested by the country in 1984 was only 3.6 tons per hectare.

Since cash crops yield more income than grain, the country can increase its agricultural income significantly if the area for grain crops is reduced to grow cash crops, as Shanghai, Zhejiang and Guangdong have done.

Examples are Fengrun County, Hebei Province, where per person income increased more than 200 yuan last year, accounting for 40 percent of the peasants' total income, and Huanggang Prefecture in Hubei Province which had an output value of nearly 4,500 yuan per hectare last year--double the national average.

"If the other provinces could raise their grain output to match those of Hubei and Hunan, China's crop output value could go up 47 percent, and if they could reach that of Zhejiang Province, an additional value of more than 250 billion yuan (67.6 billion U.S. dollars)--equivalent to the country's net agricultural output value in 1985--would be produced," it said.

To develop such high-efficiency agriculture, the paper said, the nation should raise the level of scientific farming and knowledge of market economy, and put more funds into agriculture.

China has an average farmland area of 3.3 hectares per able-bodied peasant, one-third that of Japan, one twenty-fifth that of Hungary and one three-hundreth that of the United States, but the per hectare grain output is only two-thirds that of Hungary and a half that of Japan.

At present, each farmer in China produces a value of 1,000 yuan (270 U.S. dollars) annually.

/12232
CSO: 4020/44

AGRICULTURE SEEN IN FUNDAMENTAL POSITION

Beijing NONGCUN GONGZUO TONGZUN [RURAL WORK NEWSLETTER] in Chinese No 8, 5 Aug 86, pp 4-5

[Editorial: "Further Strengthen the Fundamental Position of Agriculture"]

[Text] "The development of the national economy is founded on agriculture. This not only reflects economic laws but also natural laws. This must be a steadfast, long-term strategic policy." When thinking about past experiences and when looking ahead to future developments, we appreciate even more the correctness and importance of the conclusion in the Central Committee's Document No 1 this year. China's experience in socialist economic construction instructs us that agriculture affects the national economy and the people's livelihood. If agriculture does not develop, then it is difficult for industry to develop. The expansion of agricultural production sustains and influences the development of the entire national economy.

Look also at the facts from recent years: Between 1979 and 1984 in China, average annual growth in the GVAO was 8.98 percent. The average annual increase in grain production was 17 billion kg, and in cotton production, 650,000 tons. The average annual incrase in cash income earned by peasants' selling farm products was 17.2 percent, and the average annual increase in net cash income was 21.1 percent. The improvement in agricultural production helped growth throughout the national economy. At the same time, the average annual increases in the total value of social production and in national income were 8.96 percent and 7.92 percent, respectively. Data shows that of the 179.8-billion-yuan increase in the value of social commercial sales between 1979 and 1984, approximately two-thirds came from peasants. During this period the average annualincrease in the value of national industrial production was 8.88 percent. According to data on agricultural consumption and production, the expansion of rural demand for basic consumer items was directly linked to this. A preliminary estimate is that of the average annual increase of almost 8 percentage points in the value of total national production, approximately 5 to 6 percentage points were contributed by growth in the agricultural economy. The following conclusions can be drawn: The most important factor in the growth of the national economy between 1979 and 1984 was the rapid growth of the agricultural economy, which was based on uncommon growth in primary agricultural goods. Moreover, the growth in the national economy provided an excellent economic environment for the reforms of the economic system. Therefore, the prosperity of the agricultural economy not only directly affects the growth of the national economy, it also closely affects the smooth implementation of economic reforms.

In 1985, there were comparatively large natural disasters and there was also planned reduction in the area planted in grain and cotton, so the total production of cotton and grain dropped. Nevertheless, it was a year of good harvests. Overall, the agricultural situation was excellent. Supplies of material goods were abundant and it was easy for people to ignore agriculture, the foundation that once was weak. In recent years, peasants in some districts have lost interest in raising grain. Also, according to surveys of some provinces and cities, during the first quarter of this year the rate of growth in peasants' cash income was smaller than in past years. Yet expenses during the same period increased over those in past years. These signs show that during the second phase of reforms in the agricultural economy the development of agricultural production has encountered some new constraints. If they are not conscientiously addressed, it will be very difficult to have continued growth in the agricultural economy or to have grain production reach a new step, the goal of 450 billion kg. Therefore, we must appeal to all levels of the party, to all levels of cadre, and to all occupations and industries. Conscientiously study the spirit of the No 1 Document of this year. Appreciate further the fundamental position of agriculture. Employ all possible measures to strengthen the agricultural base. Increase rear support of agricultural development. Firmly stabilize and increase peasant income. Of course, we also can see that within the agricultural economy there will be changes in the relative values of production of the various lines, as the national economy advances. The share of agricultural production will tend especially to become smaller. It is estimated that the total value of agricultural production will drop from being 26 percent in 1983 of the combined total GUAO to approximately 21 percent in 1990. Surveying the course of industrialization in the world's developed countries, the relative decline of agriculture and the relative gain in industry are phenomenona that are laws. However, the relative decline within the national economy of the GUAO does not mean that its fundamental role has diminished. Precisely the opposite. The more that agriculture yields top position to industry, the more important becomes its strategic position. Moreover, we are a large country with a population of 1 billion. We must rely upon ourselves to solve the food problem. In recent years, although grain production has broken unprecedented levels, there has been a contradiction between the steady increase in demand for grain and unstable production. This has been caused by demands from economic construction and increased population and by the constraints on production conditions. As before, now, and for a long time to come, this will be a fundamental problem that must be continually addressed. Therefore, grain production cannot be lightly regarded at any time or under any circumstances.

Villages are the largest market for urban industrial goods. China's industrial development is based on the domestic market, which first of all is the rural market. To be sure, changes in the structure of rural production will shift a portion of the rural population into industrial production.

However, the decline in the population and the increase in agricultural mechanization means an increase in the organic composition of agricultural production. In addition, newly started rural industries and tertiary industries will install even more production materials. Without a doubt this will greatly increase demand for production materials needed for industrial products. It will further expand the market for industrial goods. In the future, as agriculture modernizes and increases investment, there will be increased consumption of industrial materials. Villages, will be, as before, the most reliable and largest market for industry. If peasant incomes decline, the retail market for industrial goods will shrink. Therefore, developing agricultural production and increasing peasant incomes are directly related to the expansion of the industrial market and the development of the national economy.

The key to further strengthening the fundamental position of agriculture is conscientious study of the problem of how best to improve rear support for agricultural development. Compared to other sectors in the national economy, agriculture has a low rate of capital utilization, demand for primary agricultural products in inelastic, and profits are small. Moreover, agriculture is constrained by natural conditions, so it is difficult to balance inputs and outputs, and risks are large. In recent years, the sustained growth of agricultural production is, of course, primarily due to the tremendous power of policies. But we should not also ignore the role of the accumulated material investment over a long period in the past. During the Seventh 5-Year Plan, the average annual increase in grain production will be 10 billion kg. To reach this new level requries not only continued use of the power of policies, it also requires new material investment to serve as a base. To improve rear support of agricultural development, it must be stressed that the state, collectives, and individuals all must work hard to strengthen the material and technological base of agriculture. The peasants should be able to obtain reliably sufficient quantities of modern production materials, such as new superior seed varieties, high-quality chemical fertilizers and agricultural machinery, fuel, etc. There must also be improved transportation, storage of agricultural goods, food processing, agricultural waterworks, and construction of other basic facilities. Already existing basic facilities must be renovated, better managed, and more fully utilized, so their usefulness can be even further exploited.

It has been more than half a year since this year's No 1 Document was issued. The broad masses of rural cadre and peasants all agree that the Central Committee accurately saw rural problems and proposed timely and effective measures. Especially important is the reiteration of the fact that agriculture is the foundation of the national economy. It also clearly set concrete measures such as those concerning the setting of grain-purchase contracts, increasing agricultural investment, and further reforming the circulation system. However, it should be emphasized that up until now there are some places that have not correctly implemented the policies and measures set forth in the No 1 Document. This of course has influenced the motivation of the peasants to produce. Therefore, the most important tasks in further strengthening the fundamental position of agriculture, at present, are to resolutely deepen economic reforms in the villages, and expend great effort implementing the set of policies and measures set forth by the Central Committee, particularly the spirit of this year's No 1 Document.

Strengthening the fundamental position of agriculture certainly is not returning to the old route of "taking grain as the key link." Instead it refers to actively expanding multicrop operations and rural industries, at the same time that grain production is maintained well. This will provide more employment opportunities to peasants and will promote the full prospering of the agricultural economy. Only by developing rural and tertiary industries can there be funds accumulated for agriculture production, thus establishing the material basis for the modernization of agriculture. This will permit more labor power to be shifted, raising returns on the scale of operations in agriculture and raising agricultural production to new levels.

12994/12948
CSO: 4007/509

PAPER URGES IMPROVEMENT IN RURAL DRINKING WATER

OW041058 Beijing XINHUA in English 1042 GMT 4 Nov 86

[Text] Beijing, 4 November (XINHUA)--The Chinese Government has committed itself to providing safe drinking water to an additional 200 million rural residents over the next 5 years, the PEOPLE'S DAILY reported today.

One-half of China's 800 million people in rural areas already have access to safe drinking water, the paper said, quoting reports made to the first national meeting on improving rural drinking water, which ended Monday in Ningbo City, Zhejiang Province in east China.

At the meeting, Liao Hansheng, chairman of the Central Patriotic Public Health Campaign Committee, said the work of the next 5 years "will not only benefit people in China it will provide an example for the developing countries of the world."

In 1981, China endorsed the UN International Drinking Water Supply and Sanitation Program for the 1980s. The goal of the program is to provide drinkable water to 2 billion of the world's people by 1990. In many countries, including China, "drinkable water" includes water that requires boiling for safety.

/12232
CSO: 4020/44

FUTURE CROPPING PATTERNS ANALYZED

Beijing NONGYE JISHU JINGJI [ECONOMICS FOR AGRICULTURAL TECHNOLOGY] in Chinese No 6, Jun 86 pp 20-22

[Article by Li Yuanzhu [2621 6678 6999]: "The Composition of Crops and Agricultural Modernization in China"]

[Text] The urban and rural economies of China now have entered a period of deep change. It is predicted that by the end of this century there will be even greater development and change, and the standard of living will rise even more. However, agriculture's position as the foundation of the national economy will not change. There will also be no diminishment in the important roles that crops play in directly supplying society with materials for production and consumption. One of the basic goals in the modernization of China's agriculture is to establish a system of agricultural production that has high and steady yields, high efficiency and quality, and positive production cycles. Only then can agriculture best shoulder the heavy responsibilities of helping to promote the economic growth of the urban and rural economies and to improve the standards of living. While completing these tasks, rationalization of crop composition is especially significant. First, within crops, building a basic structure that has a reasonable ratio of various crops is the only way that grain can be steadily supplied to society. It is also the only way to supply the raw materials for light industry and the other critical materials needed for production and consumption. It also opens a new path for the full utilization of natural resources and socioeconomic conditions within all of agriculture. This will help the comprehensive development of agriculture and the realization of modernization.

I. Several Important Problems That Must Be Solved Before Improving Crop Composition

A. The ratio of grain and other crops planted must be properly set, based on the principles of truly adhering to natural and economic laws. In districts where conditions permit, self-sufficiency in grain should be maintained. Expansion of other commercial cash crops is based on the premise of stable and growing grain production, and proceeds from natural resource strengths in the area and accords with supply and demand in the market.

B. The rational adjustment of crop ratios should be centered on improving the standard of living and the structure of diets and clothing. The proportion of fodder crops should be increased, establishing an absolutely stable crop structure of grain, fodder, and cash crops. This is needed for the expansion of animal husbandry and other lines. The internal composition of crops should change in the direction of more diversification, higher efficiency, better nutrition, and higher quality, in order to meet society's future demand for higher quality crop products.

C. The system of intercropping or rotationally cropping bean crops with other legume or fodder crops definitely must be maintained, proceeding from the premises of raising economic efficiency and helping the long-term interests of production. This will join together utilization and replenishment of the fields. At the same time, there should be reasonable amounts of area planted in peanuts, in those areas that are appropriate for planting cotton and peanuts. This provides high-quality fodder for livestock, as well as providing raw materials and a source of goods for the food-processing industries and export trade.

D. Irrational cropping patterns and cultivation methods should be adjusted and reformed, based on the principles of obtaining the most results from utilizing natural resources and obtaining the largest economic benefits. Especially in those areas in which the arable land is small but the area has a favorable climate, or water resources, or other natural resources, more thought should be given to expanding all dimensions of crop plantings. For example, a comprehenisve agricultural system could be established, encompassing sericulture, aquaculture, grain, hogs, and other elements.

E. The care of agricultural plants should meet the demands of improving the composition of crops. Superior varieties should be raised that incorporate the best local features and that offer high-quality food uses or high-yield fodder uses. Strengthening yields and disaster resistance and raising the stability of the crop combinations will improve the basic function of crop structuring.

F. The old production style of using coarse methods and getting poor yields must be changed. Production management that uses intensive cultivation should be established. To accomplish this, the laborers' educational and scientific farming levels must be raised.

II. The Main Indicators of the Rationalization of Crop Composition by the End of the Century

A. Agriculture will be able to meet society's demands for agricultural products. Moreover, it will hasten the expansion of relevant industries. At minimum, there will be the following main elements:

1. Grain supplies for the people. In the future, besides guaranteeing sufficient quantities, there also will be improvement of variety and of quality, to meet the demands of a higher standard of living.

2. Raw materials for production. Will be able continuously to supply high-quality raw materials for the fodder-processing, food, brewing, textiles, and other industries. Will help the speedy expansion of meat-based and other food products and of commercial clothing. By the end of this century, complete improvement in the structure of diet and clothing will mean reaching the level of a comfortable material life.

3. Rural expansion of commercial production. Will be able to produce famous, high-quality, and special products according to local resources and the demands of domestic and foreign markets. This will be the basis for the rural expansion of township and town enterprises that produce commodities and the expansion of China's foreign trade.

B. Able to guide the positive rotation of agricultural production, helping insure that the entire agricultural production structure follows the course of mutual assistance. The expansion of other kinds of produciton will not be hindered because of insufficient supplies of grain or other agricultural products. Nor will the balance between demand and production, environmental balance, be damaged by the imbalanced ratio of the structure or because of inappropriate planting methods.

C. Able to fully and rationally utilize natural resources in agriculture. This will reduce energy use, lower investment, save capital, and improve economic returns.

D. Able to maintain and improve the productive capacity of the soil afterward. The fields are the very basis of cultivation. The quality of the fields is an important factor that restricts the level to which agricultural production can be expanded. Therefore, the internal composition of crops should help all kinds of agricultural crops fully transform their botanical capability into functionality. They should supplement the soil and create favorable conditions for subsequent production.

E. During production, they should have strong strain capacity to handle all of the complicated natural conditions and other production conditions. For example, in order to overcome the impact of frequently occurring natural disasters in a locality, the rational deployment of first- and second-line crops can form a structure that will be able to serve as a kind of guard.

III. A Forecast of Crop Composition in the Year 2000

The following chart is a prediction of the composition of crops in China in the year 2000, based on the main objectives that rationalization of crop composition requires in the first steps of modernization during the latter part of this century, and based on the problems that may be solved by implementation of these objectives:

Crop Composition in the Year 2000

	1980		2000 (estimate)		2000 and 1980 Compared	
	Value of Production (100 million yuan)	Relative share (%)	Value of Production (100 million yuan)*	Relative share (%)	Change in Value (%)	Change in relative share (%)
Total Crops Planted	1,415	100	2,517	100	77.9	-4
Food Crops	1,014	72	1,722	68	69.8	+4
Cash Crops	227	16	500	20	120.3	
Other Crops	174	12	295	12	69.5	

* Calculated on the basis of constant 1980 prices

Comparing the prediction for the year 2000 with the present, it is easy to see that by the end of this century crop composition will be much better and more rational. This principally is because of the following:

A. Grain production: The area planted in the year 2000 will not be different from what it is today. But by fully exploiting the potential to increase production, per unit yields will improve 65.1 percent. Total production will reach 10,537,000,000,000 jin. Based on the estimated 1.2 billion population at the end of this century, per capita grain production will reach 878 jin [figures as published]. This level will insure that China's people will have abundant grain. This means that at least in terms of quantity there will be sufficient fodder and food products needed for the expansion of animal husbandry and sufficient raw materials needed for brewing and other industries. Moreover, because the area planted in rice, wheat, and small grains will be stabilized, the area planted in sorghum, sweet potatoes, and other coarse varieties will establish an effective basis for the future improvement of living standards, the improvement of diet composition, for moving toward finer grains, more variety, and greater nutrition.

B. Stable and increasing grain production will eliminate the contention between using land for grain crops or for cash crops. Important economic crops, such as cotton, edible oils, sugar, hemp, and tobacco, and other special economic crops which are small but which have wide uses and high economic value will expand to the potential permitted by planning. This will effectively help the expansion of multicropping in the future. As for the internal composition of economic crops, it will be adjusted according to future consumption demands and domestic and foreign market demands. The area planted in cotton and tobacco will decrease, and the area planted in edible oils, sugar, and hemp will increase. The area planted in other cash crops will be stabilized. The superiority of this kind of production distribution will ultimately be shown in meeting the future demands of consumers and industries, in stimulating the domestic marketplace, in expanding export trade, and in spurring balanced expansion of the national economy.

C. Based on stable and increasing production of grain and cash crops, the area planted in fodder crops will significantly increase. Moreover, in the southern rice-growing districts, the proportion of area planted in corn will increase so that most villages will steadily become production structure models production of combining grain, fodder, and cash crops. In addition, the area planted in soybeans, peanuts, and other high-protein legumes will be greatly increased. Therefore, their significance certainly is not restricted to their providing a source of large-quantity, high-quality fodder for aiding the expansion of animal husbandry industries. They will also reduce transport of fodder, save production capital, and raise economic returns.

D. There will be expanded planting of legumes such as green manure crops, soybeans, peanuts, and other crops that add to soil fertility by nitrogen fixation at the roots. Moreover, they will be established as a part of the planting system in each locality. This will be extremely beneficial for ecological balance and will help in implementing positive rotation of agricultural production.

E. In the year 2000, the increase in the value of cash crops will far surpass that of grain crops. Moreover, within the structure of crop-production values, the relative position occupied by cash crops will increase and that occupied by grain crops will decrease. This will indicate that the undesirable phenomenon of the past, of simple grain production in the crop structures, will be much improved.

IV. Favorable Conditions for the Rationalization of Crop Composition by the End of the Century

A. During the Sixth 5-Year Plan, production of grain and of cotton, edible oils, and other important cash crops was stabilized and increased significantly. The important contradiction between the expansion of grain and cash crops already has been resolved. This will help in the planned planting of all kinds of crops in the future.

B. Both inside and outside China, the consumer markets for agricultural products currently are expanding. China's rural secondary industries, such as animal husbandry, aquaculture, and food processing, and tertiary industries are expanding. Consumer demand, which increases daily, will produce a reaction in crop production, helping in reproduction and extended reproduction of crops.

C. The material and technological base of crop production currently is being improved. There is comparatively large expansion of agricultural machinery, chemical fertilizers, pesticides, electric power, and the production of other production materials. This will insure that there will be the needed material investments in crop production. It also strengthens the capabilities to withstand natural disasters, which helps stabilize and increase agricultural production.

D. Biogas, solar and wind energy, small-scale rural hydroelectric projects and other new methods for solving rural energy shortages have been discovered and in many places are being used. This will help return compost to the fields and improve soil fertility.

E. The flow of market information is gradually being expanded. The state is actively in the process of adjusting irrational purchase or retail prices of agricultural products. A rationalized price structure currently has begun to be established. This will help the peasants quickly adjust the composition of agricultural production in accordance with the laws of supply and demand.

F. Agricultural science and technology presently is advancing. The peasants increasingly want to master modern science and technology. This will cause the structure of knowledge in the broad numbers of villages to change. This will increase the peasants' consciousness of expanding production according to natural and economic laws.

12994/12948
CSO: 4007/504

REFORM OF RURAL CREDIT COOPERATIVES

Beijing NONGYE JINGJI WENTI [PROBLEMS OF AGRICULTURAL ECONOMICS] in Chinese No 8, Aug 86 pp 38-40

[Article by Lu Lianxiang [6424 1696 4382]: "A Discussion of the Reform of Rural Credit Cooperatives"]

[Text] Credit cooperatives are important components of the rural cooperative economy. They have, throughout the nation, various kinds of deposits exceeding 72 billion yuan and loans amounting to 40 billion yuan. They also account for 78.43 percent of the savings deposits held by the agricultural Bank and credit cooperatives in the rural areas, 76.75 percent of the loans extended to peasant households, and 47.77 percent of loans extended to town and township enterprises by the Agricultural Bank and credit cooperatives. It is thus a matter of urgency to bring about thoroughgoing reforms in credit cooperatives in line with the policy of the CPC Central Committee and the State Council and to take full advantage of the favorable financial situation of credit cooperatives to promote the development of the commodity economy.

It has been over 5 years since the financial and economic leadership team set up by the central government in 1980 pointed out the need for the reform of credit cooperatives. During this period, the CPC Central Committe and the State Council have on a number of occasions set forth various policies and principles for the reform of credit cooperatives. Although some progress has been made by various localities in the implementation of such policies and principles, what has been accomplished has by no means been sufficient to meet the need for the development of the commodity economy in the rural areas. One conspicuous problem in the reform of credit cooperatives is the increasingly sharp conflict of economic interest between the Agricultural Bank and the credit cooperatives and the difficulty of bringing about a measure of coordination between the two. Since both the Agricultural Bank and the credit cooperatives are engaged in credit loan operations in rural areas below the county level, it follows that when credit cooperatives increase the volume of their operations, those of the Agricultural Bank are reduced and that when profits for credit cooperatives are increased, those for the Agricultural Bank are correspondingly diminished. Thus, credit cooperatives have become not only a "rival," but a formidable one at that, of the Agricultural Bank. Under such circumstances, it would be difficult for credit cooperatives to be given autonomous powers in their operations and to be permitted to play their full role in the extension of loans to the people in accordance with the provisions of the reform policy under the leadership of the Agricultural Bank and to become a component part of the rural cooperative economy.

What, then, is the proper course of action? Opinions differ as to how the thoroughgoing reform of credit cooperatives should be brought about. The following are the three major viewpoints:

1. Credit cooperatives should continue to be reformed in accordance with the relevant policy decisions of the CPC Central Committee and the State Council under the leadership of the Agricultural Bank. The existing modus operandi should continue to be developed so long as the conflict of economic interest between the Agricultural Bank and the credit cooperatives can be resolved. As a matter of fact, this method of finding a solution to the problem has been adopted by most localities, though with limited results.

The basic reason for the lack of success is that a "private plot of land" as represented by credit cooperatives is, as a matter of fact, retained by the Agricultural Bank. When the Agricultural Bank fails to fulfill its credit loan quota, it is the credit cooperatives which have to take up the slack; when the Agricultural Bank runs short of funds, it is the credit cooperatives which are required to put in large amounts of deposits; when the Agricultural Bank lacks the financial means to construct office buildings, it is the credit cooperatives which have to furnish the funds for their construction on the understanding that the completed buildings are to be used by both. While this situation does not apply to each and every cooperative, it has been found to be generally the rule rather than the exception. It is for this reason that such clearcut policy stipulations as that forbidding the Agricultural Bank to issue directive quotas regarding the amounts of credit loans and bank deposits to the credit cooperatives have failed to be observed in many localities. If thoroughgoing reforms of credit cooperatives are carried out according to policy stipulations, if autonomous powers of operation are restored to credit cooperatives, and if the "cooperatives are given back to the people," it will mean that the Agricultural Bank will have to give up this "private preserve" and to "cut a piece of flesh" from its own body. Thus, in the absence of changes in the existing system, it remains to be seen whether the effective reform of credit cooperatives can be brought about in accordance with policy stipulations.

2. The Agricultural Bank should be merged with credit cooperatives to form semiofficial and semiprivate agricultural cooperative banks to be placed under unified management and accounting (or accounting at different levels) and to be held jointly responsible for profits and losses. The standpoint of those holding this view is that such an arrangement would resolve the conflict of economic interests between the Agricultural Bank and the credit cooperatives without jeopardizing the interests of the departments of the Agricultural Bank. This proposed merger is not because if a need to meet the development of the cooperative economy in the rural areas. Joint financing should be enlivened in line wich the rules for reforming credit cooperatives. This should effectively spur on the development of the rural commodity economy. Regarding the overall reform of the entire finance system, we must first of all break up

the unitary vertical management system under which specialized banks operate and engage in the development of horizontal accommodation of funds in order to meet the need for the joint horizontal development of the economy. The concept of establishing an agricultural cooperative bank fails entirely to take into consideration the basic problem of the need to reform the banking system. On the contrary, it merely calls for the making of certain readjustments to maintain and to consolidate the existing system. The flaws of this system, running counter as it does to economic principles, have been gradually exposed as the specialized banks seek to engage in operations in a businesslike manner. Such flaws cannot be eliminated by the establishment of agricultural cooperative banks.

3. It is necessary to alter the jurisdictional relationship of credit cooperatives by putting them under the leadership of the People's Bank of China instead of that of the Agricultural Bank. Specifically, it is necessary to turn the integrated credit cooperatives on the county level into the operations management type of economic entities (the existing county integrated cooperatives are but an empty shell with only a signboard hanging in the county Agricultural Bank) to exercise control over credit cooperatives at the basic level, to engage in certain operations and to offer services to credit cooperatives at the basic level under the leadership of the People's Bank of China. Thus, three banking institutions, namely, the Industrial and Commercial Bank, the Agricultural Bank, and credit cooperatives, will coexist at the county and subcounty levels to compete for existence and development. In view of the need for the development of the commodity economy, that is the best program conceivable that is also in line with the "Temporary Provisions for the Management of Banks in the People's Republic of China." The adoption of this program will, however, make it difficult for the Agricultural Bank to maintain their offices in certain areas. That is why most of the comrades in the Agricultural Bank are adamantly opposed to this program.

It is the view that this program meets the following needs for speeding up the development of the commodity economy in the rural areas as well as that of the rural cooperative economy.

1. The Need To Develop the Commodity Economy: According to the law of values, it is certain that the production and circulation of commodities will break though, and are in the process of doing so, regional partitions and demarcation lines set up by the various trades and businesses and the ownership systems, that integrated economic entities will emerge in the cities and rural areas, that the agricultural, industrial and commercial sectors will merge into an organic whole and that there will emerge various forms of integrated economic entities formed by the merging of state, collective and individual enterprises. This program which, as a matter of fact, is being vigorously developed, has made higher demands on the credit loan service departments, that is the credit cooperatives, to break through regional demarcations and restrictions imposed by the division of labor if they are to render vertical and horizontal credit loan services to society on a wider scale. These services will first be made available in small cities and towns such as county towns and, with the increase in commodity production and the expansion of the scope of purchasing and marketing operations, will be gradually developed. To meet the needs for

economic development, integrated credit cooperatives--integrated economic entities--will first be established in county towns and later developed on a wider scale. Rather than being a subjective and man-made conjecture, this is in line with the trend for the development of the commodity economy.

2. The Need To Develop the Cooperative Economy: The link coordinating the planned commodity economy, the macroeconomy, and the microeconomy in the development of the rural areas is provided by integrated economic cooperatives. According to the system of contracted responsabilities linking remuneration with total output adopted in the rural areas, household operations represent the basic level of the cooperative economy in the area of production, while the various forms of integrated economic entities created on such a basis represent another level of the cooperative economy. In order to further develop the cooperative economy, the supply and marketing cooperatives have decided to restore their integrated cooperatives at various levels. The emergence of integrated cooperatives at various levels is inevitable in the course of the development of the cooperative economy in the areas of production and services. It is the function of credit cooperatives to promote the production, the purchasing and the marketing of commodities. The emergence of various integrated economic cooperatives in the areas of commodity production and circulation is certain to lead to the establishment of integrated credit cooperatives to meet the demands for the development of the cooperative economy. In order to develop the cooperative economy in the rural areas, it is necessary to turn the existing integrated credit cooperatives into the operations management type of economic entities and to place them under the leadership of the People's Bank.

3. The Need To Develop the Cooperative Economy: Due to the uneven rate of economic development in various areas and other factors, the amount of funds at the disposal of credit cooperatives differs one from another. Furthermore, due to the different farming seasons in different areas, the credit cooperatives within the same county and among the counties, regions, and even provinces must take it upon themselves to make up for each other's shortage of funds with their surpluses on the principle of mutual benefit. The best way to organize this type of regulatory mechanism is to establish integrated credit cooperatives with autonomous powers to engage in operations under the leadership of the People's Bank.

4. It Is Necessary To Initiate Fund and Account Transfer Operations: With the development of the commodity economy, the frequent purchasing and marketing operations, and the crisscrossing channels for purchasing and marketing, there has been an increase in the frequency of receipts and payments as well as in the amount of funds involved. To meet the needs for the purchasing and marketing of commodities, credit cooperatives must initiate various forms of fund and account transfer operations and integrated credit cooperatives must be turned into the management and operations type of economic entities to form a network for the settling of accounts. The gradual increase in the volume of fund and account transfer operations and the corresponding reduction in the use of cash for settling accounts are in line with the objective demand for the development of the commodity economy and such services should be provided by the banking departments.

The existing conflicts of economic interest between the Agricultural Bank and the credit cooperatives may be summarized as follows:

First, the various types of economic associations developed by peasants who engage in household operations require the credit cooperatives to break through the rural boundaries and to provide them with high-quality services, including the accommodation of funds and the transfer of funds and accounts on a wider scale. According to the provisions of the system of the Agricultural Bank, however, it is the bank and not the credit cooperatives that engages in operations in areas above the township level. Thus, manmade restrictions have been imposed on the development of the favorable cooperative banking situation.

Second, the interest rate set by the Agricultural Bank for funds being transferred from the credit cooperatives to the Agricultural Bank is lower than the average cost incurred by credit cooperatives in absorving various types of saving deposits. That means that, in addition to collecting more funds from the credit cooperatives (a considerable part of the funds made available to the Agricultural Bank is derived from funds deposited by credit cooperative, amounting to 40.8 billion yuan at the end of 1985), the Agricultural Bank also causes them to suffer financial losses.

Third, it should be, and has always been, the responsibility of the Agricultural Bank, in its leadership capacity, to provide training for staff workers of credit cooperatives. Furthermore, a large part of the operations of the Agricultural Bank is entrusted to credit cooperatives. That means that unless the quality of credit cooperative staff workers is improved, the quality of work being done by the bank is bound to suffer. In other words, whether from the leadership responsibility point of view or that of the operations of the bank itself, the Agricultural Bank should hold itself responsible for providing effective training such as has been done in the past, to staff workers of credit cooperatives. That, however, has not been the case. The agricultural Bank in many localities has not taken seriously the work of providing training to credit cooperative staff workers or has even neglected it altogether.

Fourth, those comrades engaged in the credit cooperative management departments in the Agricultural Bank have been subjected to censure. The specific responsibility for providing leadership to credit cooperatives is being assumed by the credit cooperative management departments at various levels in the Agricultural Bank. Those comrades engaged in credit cooperative operations should hold themselves responsible for doing what they can to make credit cooperatives vigorous and going concerns. Otherwise, they would be remiss in their duties. In view of the conflict of economic interest between the Agricultural Bank and the credit cooperatives, however, those comrades who seek to invigorate the operations of credit cooperatives are often given the cold shoulder. They have, for instance, been compared to Guan Yu [7070 5038], "who worked for Liu Bei [0491 0271] while in the employ of Cao Cao [2580 2347]." They have even been accused of "living off one person while secretly helping another," accusations which have seriously damaged the positive attitude of those comrades engaged in the work of credit cooperatives.

The above-mentioned problems would not exist if the integrated credit cooperatives at the county level were turned into the management and operational type of economic entities, if unified control were exercised over credit cooperatives at the basic level and if they were placed under the direct leadership of the People's Bank.

It is my opinion that overall consideration should be given to the problem of reforming credit cooperatives in view of the fact that such reforms also involve the reform of the finance system in the rural areas. The three following principles should be taken into consideration when the problem is being studied. First, consideration should be given to the need to promote the development of the planned commodity economy, since banking operations are intended to promote economic development and to lose sight of the main objective of promoting the development of the commodity economy would render meaningless the existence of financial institutions. Second, it is necessary to look at the overall situation and to conceive of the entire nation as a chessboard. It was in this regard that Comrade Mao Zedong had occasion to make the incisive comment that when a conflict of interests occurs between the whole and its parts, precedence must be given to the interests of the whole. The same rule shoud apply when we study the banking system in the rural areas. We must look at the situation as a whole when we study the feasibility of setting up offices. Third, the development of the planned commodity economy requires that we exercise effective macroeconomic control while invigorating the microeconomy and pay equal attention to both and not overemphasize one at the expense of the other.

9621/12951
CSO: 4007/41

ICE RUN DISASTER OF HUANG HE CONTROLLED

OW290720 Beijing XINHUA in English 0641 GMT 29 Oct 86

[Text] Jinan, 29 October (XINHUA)--The disastrous ice run of the Yellow River has been brought under control in the lower reaches for 30 years, according to an official of the Shandong Province Yellow River conservation office.

While the ice run used to be an annual cause for worry, conservation efforts have prevented floods for the past 30 years and regional fears have been eased.

During an 83 year period from 1855 to 1938, ice jams caused the Yellow River, the second longest in China, to flood its banks 74 times.

Since the 1950s massive construction projects have all but eliminated the dangers of ice jams. In 1985 an ice jam caused the water level of the lower reaches of the river to rise to a new record but there was no flooding. The icy run off was diverted to Sanmen Gorge reservoir in the north and sluice gates were opened in the south as the potential flood waters passed without incident, said Bao Xichen, chief engineer of the conservation office.

The Sanmen Gorge water-control project built in 1960 has greatly alleviated the threat of the ice run by regulating the rate of flow, according to Bao.

The dikes in the lower reaches have been strengthened three times since the new China was founded in 1949. In 1970 and 1971, the narrow parts of the river in Kenli County and Jinan City were widened from 400 metres to 4000 metres to enlarge their flood discharging capacity.

Five large flood gates were built along the river to ensure the safety of the dikes.

Meanwhile, the conservation office has changed the position of the river mouth three times to improve the flood discharging capacity, said Bao.

Every year coast guard ice breakers plow through the ice at the river mouth and tens of tons of dynamite are used to "cut keys" in the ice to dislodge the most stubborn ice jams.

It remains an arduous and complex job to fight the river's annual ice run. "We should further our research to find even more effective measures to finally get rid of its threat," Bao told XINHUA.

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CSO: 4020/44

SOIL EROSION COMBATED IN HUANGTU PLATEAU

OW311410 Beijing XINHUA in English 1331 GMT 31 Oct 86

[Text] Zhengzhou, 31 October (XINHUA)--As the Yellow River meanders along the escarpment of the Huangtu plateau it begins to live up to its name.

Hundreds of tributaries from the plateau merge with the torrents of the 5,000 kilometer long river and together they eat away at the plateau itself. The Yellow River travels another 2,000 kilometers to sea and with it goes 14 billion tons of silt from the far away plateau.

Data gathered by Chinese river specialists show that each year about 4,000 tons of soil per square kilometre are eroded from the plateau. In some areas it can be as much as 10,000 tons per square kilometer.

All this makes the Yellow River the most silt-ridden river in the world.

For decades the Yellow River Conservation Committee has been trying to fight the river's silt and the main battle has been in the Huangtu plateau. Despite their massive efforts the committee has reduced the amount of silt in the river by only 5 percent.

Since the 1950's about 5.33 million hectares of land most affected by erosion have been planted with trees, 1.33 million hectares of grass have taken root and another 2.66 million hectares [have] been built into terraced fields to prevent soil erosion, according to Wang Changlu, chief engineer of the Yellow River Conservation Committee in Zhengzhou, the capital of Henan Province.

More than 30 scientific research institutes on water and soil conservation have been set up in the area in the past over 30 years.

A technical network connecting village, county and administrative regions has been formed to offer advice on stopping soil erosion.

In recent years, the responsibility system has been applied in the area to encourage farmers to plant trees and grass on the barren land.

As a result, soil erosion has been partially prevented in many areas. About 40 to 60 percent of the erosion has been stopped in the reaches of [the] Wuding River in Shaanxi Province, in the area of the Qingshui River in Ningxia Hui autonomous Region, and of Sanchuan River in Shanxi Province, according to Wang Changli.

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CSO: 4020/44

SPECIALISTS CITED ON CONTROL OF URBAN FLOODS

OW051222 Beijing XINHUA in English 1123 GMT 5 Nov 86

[Text] Nanjing, 5 November (XINHUA)--Officials need to pay more attention to urban flood control in China, experts in water conservation and city planning urged here today.

Participants at a national conference on urban flood control said floods threaten the health of China's people and the progress of the country's economic development.

"Strengthening existing facilities and building new flood control systems is a matter of great urgency," one expert said.

Others at the conference reported that major flood control projects have been completed in many of China's cities since the founding of the People's Republic in 1949. The country has build dikes with a total length of more than 5,500 kilometers as well as a flood control and discharge system, they said.

"Still," one expert argued, "as urban development continues, we'll need better flood control facilities to make sure we do not lose what we have accomplished economically to floods."

In 1984, according to another expert who quoted the latest available figures, urban industrial output value constituted 80 percent of the country's total, while urban profits and taxes made up an even greater share.

Of the 48 cities with a population of more than 500,000 in China, he said, 18 are located in coastal areas or along major rivers, and many of these are in low-lying areas, making them vulnerable to floods.

The expert said a recent survey of 97 of China's cities revealed that between them they had only 15 dikes capable of withstanding a catastrophic flood--the sort expected once a century. They had 26 dikes that cold resist a serious flood--which usually occurs every 50 years.

"But the situation is even worse than it sounds," said the expert. "Most of the formidable dikes are in the northeast, north and northwest parts of the country, not in the east, central and southern parts--where the rivers and lakes tend to be."

For example, he said, the Yantgtze River--China's longest--has a drainage area of 1.8 million square kilometers, including one-third of China's population, half of its industrial output value and one-quarter of its cultivated land.

"Hit by a serious flood, countless people in the area would die, and the economic loss would approach 50 billion yuan (13.5 billion U.S. dollars)," he said. "Think what that would do to the country's economic development, to say nothing of people's lives."

In recent years, the Yangtze's ability to discharge flood waters had been cut by 20 percent by new factories along the river bank, improper waste disposal and other factors, he said.

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CSO: 4020/44

GUANGMING RIBAO NOTES SHORTAGE OF AGROTECHNICIANS

OW261040 Beijing XINHUA in English 1030 GMT 26 Oct 86

[XINHUA headline: "Shortage of Agrotechnicians--Pressing Problem"]

[Text] Beijing, 26 October (XINHUA)--The GUANGMING DAILY today calls for new policies and measures to promote the training of young people now working in the countryside, where there is an acute shortage of technicians and other experts.

It also proposes that equal attention be given to both college-trained specialists and those crack hands who have no sound academic background.

Some 100 million rural laborers are leaving the land to work in township industries from 1986 to 1990, and efforts are being intensified to spread agricultural science and technology.

This would require millions of agrotechnicians and the present number falls far short of the needs, the paper said.

The paper quotes a 1983 survey report from the Ministry of Agriculture, Animal Husbandry and Fisheries saying that on the average, there was only 1 technician for 10,000 rural residents or 159 rural industrial enterprises.

The state had since 1949 trained 1,045,000 people through agricultural colleges and secondary technical schools. But the number of such people now working on farms was only about 150,000.

The paper proposes incentives to keep these agrotechnicians on their jobs and training to the 120 million middle school graduates now working on farms, especially those crack hands among them.

According to the paper, the policies and measures, suggested so far by the state science and technology commission, include increasing state investment in rural education, opening up rural education channel on television, setting up rural personnel training funds at county levels, opening up training classes and agrotechnical service centers, and encouraging urban self-taught students and technical personnel to work in the countryside.

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CSO: 4020/39

WFP DEVELOPING FISH FARMS IN RURAL AREAS

HK040909 Beijing CHINA DAILY in English 4 Nov 86 p 1

[By staff reporter Liu Dizhong]

[Text] The World Food Programme [WFP] has approved a new food-aid project for China that bring the UN organization's commitment here to about $460 million since 1979.

The project is aimed at developing fish farming in the rural areas of nine municipalities where fish consumption per person is much lower than the national average.

WFP will contribute $38.5 million for food for farmers participating in the project, which will extend over 3 years. It involves construction of nearly 7,000 hectares of fish ponds on poor land in 19 counties of the 9 municipalities in Changchun, Hohhot, Yinchuan, Xi'an, Kunming, Jinan, Zhangzhou, Nanjing and Hefei. Total population of the 9 municipalities is 32 million.

Despite the rapid development of fish production over past decades, each Chinese eats on average only about 6 kilograms of fish annually, about one-third of the world average.

Fish consumption is even lower in the nine municipalities, averaging 1.4 kilograms per person.

When completed, the ponds will be able to produce more than 18,000 tons of fish a year on land that is now unused or used only marginally.

The project is a contribution to China's efforts to improve the people's diet by increasing fish and animal products, Jim Alexander, WFP director of operations, told CHINA DAILY.

The nation plans to triple its current fish production by the end of the century. By last year, total output had increased to 6.97 million tons from 4.2 million tons in 1974, putting China third in world fish production.

Several other projects for fishery development have been carried out under WFP-assisted programmes. The first project, in 1982, was for development of fishery resources in Hongze County, Jiangsu Province.

One of the three projects approved by WFP this year also involved a fishery development project in Boyang Lake of Jiangxi Province. Another was a forestry project in Pingshan County of Hebei Province.

For the projects in the nine municipalities, Alexander said, WFP will supply 300,000 tons of wheat and other food.

The WFP-supplied food is intended as an incentive for farmers to participate. It is given as part of wages to people working on the project.

Quite a number of people are involved in WFP-assisted projects. More than 150,000 families or households will take part in the fishery project in the nine municipalities, which will require 65 million days of labour.

Irrigation, land development, forestry, fishery, water-supply improvement and rural road construction are usually the major WFP-assisted projects in China. They aim at improving agricultural production and living standards of rural people in poor areas, Alexander said.

He said the WFP is "very, very satisfied" with the cooperation it has received from the Chinese Government, which is entirely responsible for implementing all the projects. Since 1979, the Chinese Government has invested an equivalent of about $600 million, or 60 percent of the total, in the WFP-assisted projects.

"We hope to use Chinese experience to demonstrate to other countries how food can be used as a good tool for development," the director said.

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CSO: 4020/39

CONTRACT FARMING FREES LABOR FOR FACTORIES

OW081226 Beijing XINHUA in English 0902 GMT 8 Nov 86

[Text] Nanjing, 8 November (XINHUA correspondent Yang Futian)--Technical and machinery services, on the rise in rural China, are opening new vistas for agriculture, Ling Qihong, deputy governor of Jiangsu Province, said here today.

Supported by state and local factories, the services are beyond the reach of individual households, the basic production units in the countryside.

China has contracted out fields to farming households since 1979. This has aroused the enthusiasm of the peasants and promoted production.

"Specialized services will assist the reform and help to speed up agricultural growth," Ling said.

An example is Houzhai Township in Jiangsu Province, where mechanization services perform half the field work, releasing half the local labor force to work in factories.

With 482 employees, service institutions of the township, which has 2,000 hectares of farmland and 8,000 households, carry out rice seedling nursing, ploughing, plant protection and irrigation. Peasant households are engaged only in transplanting, fertilizer application and harvesting.

Technical services, provided by a system of county centers, township stations and specialized households, focus on demonstration and spreading of agro-techniques and research findings. The county centers have research institutes, crop protection, seed, soil and fertilizer stations, and technical schools.

Up to now, 700 of the country's more than 2,000 counties have established such centers, according to Yang Zhongyang, vice-minister of agriculture, animal husbandry and fisheries.

The system has spread 150 new rice strains and 470 major agro-technical findings, resulting in an extra income of 14 billion yuan (about 3.8 billion U.S. dollars) from the agricultural sector.

Machinery services are mushrooming in developed areas, including tye Yangtze and Pearl River deltas, and northeast China; and about 90 percent of the villages around Taihu Lake have machine teams to help farmers in ploughing, sowing, crop protection and harvesting, Yang said.

Last year, the country had 4.67 million tractors, 15.4 percent more than in 1984. The agricultural machines have a total of 284 million horsepower, 7.1 percent more than in the preceding year.

Following a policy of industry supporting agriculture, the services are cheap or free of charge, Yang said. In the Yangtze River delta, transplanting a hectare of paddy fields (including rice seedlings) costs only 75 yuan (about 20 U.S. dollars) or one-third of the cost if the peasants did it by hand in the traditional way.

Thanks to the services, Jiangsu Province has averaged more than 500 kg of grain per person annually over the past 3 years despite the fact that its population increased and farmland shrank.

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CSO: 4020/45

BRIEFS

DIVERSIFIED TREE GROWTH METHODS--Beijing, 21 October (XINHUA)--Eighty-five percent of China's 4,000 state-run tree farms have set up processing factories to make full use of local resources, according to the Ministry of Forestry. Tree farms used to concentrate on supplying lumber products with little attention to diversification, said a ministry official. By setting up processing factories in the forest zones, these farms produced 6.53 million cubic meters of fibre boards over the past 5 years, up from 3.2 million cubic meters in the previous 5-year period. According to the latest statistical report, the sales of the sideline products last year accounted for 37 percent of the total income of the state-run tree farms. [Text] [Beijing XINHUA in English 1535 GMT 21 Oct 86 OW] /12232

FORESTRY PRODUCTS PRODUCED--Beijing, 18 October (XINHUA)--China produces 25 million cubic meters of timber, 2 million cubic meters of plywood, 410,000 tons of rosin, 45,000 tons of tannin extract and 5,000 tons of shellac a year, an official said at a recent national meeting of the forestry industry. [Text] [Beijing XINHUA in English 1320 GMT 18 Oct 86 OW] /12232

COTTON GROWING CENTERS PLANNED--Beijing, 24 October (XINHUA)--This year China will develop 50 counties into high-quality cotton growing centers, an official of the Ministry of Agriculture, Animal Husbandry and Fisheries said today. The newly sleected counties will receive a 100 million yuan (27 million U.S. dollars) allocation, and will become part of the cotton growing counties designated in 1985, raising China's high-quality cotton growing areas to 72. At the same time, China will choose 50 counties to set up stations specializing in cotton research and technical training. According to an agreement recently signed in Beijing, the main task of the counties will be to establish seed farms and cotton processing plants, while spreading technology to neighboring counties. In 1990, the counties are expected to have 1.3 million hectares of cotton fields, producing 1 million tons of high-quality cotton and 150,000 tons of seed. The counties are scattered throughout the Xinjiang Uygur Autonomous Region and 13 provinces, including Shandong, Henan, Jiangsu, Hubei, Anhui, Jiangxi, Zhejiang, Liaoning, and Sichuan. China produced 4.15 million tons of cotton last year, with part being exported. [Text] [Beijing XINHUA in English 0758 GMT 24 Oct 86 OW] /12232

FISHING GROUNDS MONITORED--Beijing, 29 October (XINHUA)--To put more fish on Chinese tables, the country has begun to monitor water temperature in major fishing grounds by aerial remote sensing, according to GUANGMING DAILY. Since mid-October, the National Bureau of Oceanography has arranged 10 flights on 5 separate occasions to test the method on China's eastern sea fishing grounds and has received satisfactory results, the paper said. The new method has been proved to cover a large tract of water and get accurate water temperature readings, which can be used to determine fish distribution. The new technique is much quicker than the present method. The technique will be applied in all of the country's major fishing grounds in 2 or 3 years, the paper said. [Text] [Beijing XINHUA in English 0568 GMT 29 Oct 86 OW] /12232

MORE VEGETABLE, FRUIT ACREAGE--Beijing 30 October Chinese peasants increased the number of hectares planted with vegetables this year by 7.6 percent. The number of hectares growing fruit increased by 29.8 percent as against the figures for 1985, according to the Statistics Bureau. The total area of vegetable and fruit fields now accounts for only 4 percent of the country's farmland. Experts say there is a great potential for increasing vegetable and fruit production because these products have become a new major source of income for many peasants, the bureau said. [Text] [Beijing XINHUA in English 1233 GMT 30 Oct 86 OW] /12913

DEMAND FOR FERTILIZER--Beijing, 8 November (XINHUA)--Chemical fertilizer production should be increased to meet farmers' demands, a central government official said in today's PEOPLE'S DAILY. Over the past few months, fertilizer has been in short supply in many rural areas and factories should tap resources to produce enough fertilizer to satisfy farmers, the official from the Ministry of Chemical Industry said. "Sufficient electricity supply should be guaranteed for increased fertilizer production in the coming months," the official said. According to the paper, the ministry has already called on factories to produce another three million tons of fertilizer in addition to fulfilling the production quotas assigned for this year. By October, factories had already turned out 55 million tons of fertilizer, and they plan to produce 72 million tons next year, the paper said. [Text] [Beijing XINHUA in English 0733 GMT 8 Nov 86 OW] /12913

GUARD AGAINST FOREST FIRES--Beijing, 30 October (XINHUA)--The Ministry of Forestry has warned to be on guard against forest fires as the weather becomes drier and winds begin to pick up. An official of the ministry said here today that a massive publicity campaign on forest fire prevention should be launched, fire monitoring strengthened and fire fighting organizations should get ready. According tot he latest statistics, there were 24 fires in the Yakeshi forest zone in northeastern Inner Mongolia Autonomous Region between late September and early October, four times as many as in the same period last year. Sixty fires were reported in Fujian province in the first half of October and the number of fires in Guangdong province also increased compared to the same period last year. [Text] [Beijing XINHUA in English 0811 GMT 30 Oct 86 OW] /12913

PLANS TO IMPROVE LOW-YIELD LAND--Beijing, 5 November (XINHUA)--China plans to upgrade low-yield land on the North China plain during the Seventh 5-Year Plan period (1986-1990), today's PEOPLE'S DAILY reported. The three million hectare project is a 40 percent increase over the Sixth 5-Year Plan period (1981-1985), according to the Chinese Academy of Agricultural Sciences, the paper added. Under the five year program, 12 experimental or model areas will be set up for saline-alkali and arid land improvement using a state investment of 17 million yuan (US$4.6 million), the paper said. "Scientists from key institutions in the provinces of Hebei, Shandong, Jiangsu, and Anhui and Henan, and Beijing and Tianjin cities will do research in improving saline-alkali land, fertilizing soil, and updating irrigation systems and cultivation techniques, the paper said. They will also make an overall plan for creating shelter-forests and exploring and utilizing agricultural resources to boost grain production on the North China plain, which is made up of 6.7 million hectares of low-yield land. [Text] [Beijing XINHUA in English 0742 GMT 5 Nov 86 OW]] /12913

SCIENTISTS WARN OF ECOLOGICAL DISASTER--Beijing, 6 November (XINHUA)--A worldwide shortage of natural resources and ecological disaster is heading our way, warns an article by noted scientists in today's PEOPLE'S DAILY. Dong Zhiyong, vice minister of forestry, says resources developers must not only reap economic benefits but must also respect the ecology when exploiting what the earth has to offer. With the population boom and the development of modern society since 1960, he says, a number of countries have destructively exploited their natural resources. Ten million to 20 million hectares of forests disappear each year and one living species becomes extinct each day, according to the vice minister. He says, it is expected that at least one-sixth of all living things will be stamped out by the end of this century. Li Wenhua, research fellow of the Chinese Academy of Sciences, suggests a survey be undertaken immediately in China. He wants an inventory of plan and animal resources in the country and new laws and policies to protect them. Li also suggests a national publicity campaign be launched to raise the awareness of resource users. Along with China's efforts to control its population the scientist writes that protection of the environment is equally important. [Text] [Beijing XINHUA in English 1122 GMT 6 Nov 86 OW] /12913

IMPROVEMENTS IN ERODED AREAS--Beijing, 7 November (XINHUA)--Some 11,200 square kilometers in China's eight most seriously eroded areas have been subjected to control measures since 1982, 6.5 times the figure for the 30 years prior to 1982, the ECONOMIC DAILY reported today. A plan adopted at a 1982 national work conference on water and soil erosion obliged the eight areas, in Shaanxi, Hebei, Shanxi, Liaoning, Gansu, and Jiangxi provinces and Inner Mongolia autonomous region to free all their land from erosion in 1990. More than 350,000 rural families, in 43 counties and banners in these areas are under contract to implement the plan, and have saved half the contracted land, some 400,000 hectares, from erosion, the paper said. Trees and grass have been planted and irrigation systems constructed in the eight areas, the paper added. [Text] [Beijing XINHUA in English 1302 GMT 7 Nov 86 OW] /12913

FORESTRY DEVELOPMENT--China has made rapid progress in forestry. During the Sixth 5-Year Plan, it produced more than 6.3 million cubic meters of artificial boards, which was twice the amount produced during the previous 5-year plan. Substantial increases were also registered in such chemical forestry products as rosin, tannin extract, and shellac, whose total outputs amounted to 1.61 million, 180,000 and 7,000 metric tons respectively. In terms of annual capacities, China can now produce more than 25 million cubic meters of timber, over 2 million cubic meters of chipboard, 410,000 metric tons of rosin, 45,000 metric tons of tannin extract, and 5,000 metric tons of shellac. [Summary] [Beijing XINHUA Domestic Service in Chinese 0034 GMT 18 Oct 86 OW] /12232

CSO: 4020/43

GEOGRAPHIC SHIFT IN GRAIN OUTPUT AIDS READJUSTMENT

Beijing NONGCUN GONGZUO TONGZUN [RURAL WORK NEWSLETTER] in Chinese No 8, 5 Aug 86 p 16

[Article by Du Chunyong [2629 2504 3057], Luo Zicheng [7482 1311 4453], and Qi Jingsheng [7871 4842 3932]: "Geographic Redistribution of Grain in the Readjustment of the Production Structure"]

[Text] Not long ago, we surveyed problems in Jiangxi and Fujian concerning grain production and circulation, and further adjustment of the agricultural production structure.

Fujian is in the Asian temperate zone. It has rich resources in its hills and in the sea and has favorable conditions for expanding foreign exchange-earning agriculture. In recent years, to make the most of its strengths, it has studied the "Hills and Sea Classics," and changes in the production structure have yielded preliminary benefits. There have been large increases in aquatic production, sugar beets, tea, and fruit. The total value of agricultural production rose from 4.6 billion yuan in 1978 to 9.3 billion yuan in 1985. Per capita rural income also rose from 191 yuan to 396 yuan. However, full utilization of the area's strengths was hampered because of grain shortages. Fujian only has on average .7 mu per person. For a long time, its grain needs have been supplied by outside sources. Since the 3d Plenum of the 11th CPC Central Committee, there has been relatively rapid expansion of grain production, increasing from 7.45 billion kg in 1978 to 8.05 billion kg in 1984. However, grain consumption has also increased continuously. At present, the total consumer already has reached 9.05 billion kg. In 1990, it will reach 10.8 billion kg. This large difference between demand and production must depend upon grain reassignments for resolution. In 1985, 1 billion kg of grain (under the state plan) was reassigned. The improvement of grain supplies has become an important condition in the future readjustment of the agricultural production structure.

Grain production is Jiangxi's strong suit. In 1978, grain production was 11.25 billion kg and in 1985 it had reached 15.33 billion kg. In recent years, grain production basically has tended toward continued stable growth. Although Jiangxi is self-sufficient in rice, it also ships large quantities to other provinces and abroad. Much grain flows to Fujian either through the state plan or through free-market channels. Currently, it is most important that the two provinces be able to secure regional grain balance over a comparatively long period, under the guidance of the state plan. This will enable each to fully exploit their respective strengths.

This not only is in the basic interests of the two provinces, it also has many objective aspects. 1. Taking the long view, it will be difficult at the moment to solve the grain shortages in Fujian. If its own strengths are to be further utilized, it must have a reliable source of grain. And the longstanding grain surpluses in Jiangxi will continue. One province has shortfalls, the other surpluses. The one can redistribute to the other. 2. Geographically speaking, the two provinces are contiguous, so transportation is convenient. 3. Consumption habits are the same, and the products are suited for the market. 4. Most of the Fujian districts that have grain shortages are located along the coast. Their economies are relatively developed. They have expanded production of economic goods, in aquaculture, in industrial and sideline industries, and have earned relatively high economic returns. The masses are willing to pay for grain. 5. In 1985, Fujian consumed approximately 500 million kg of imported grain. A large amount of foreign exchange could be saved if this were supplied domestically, using the method of interprovincial balancing.

Implementation of interprovincial grain balancing should be guided by the state plan and should be based on mutual benefits. For now, the following problems should be solved:

1. Improve the motivation of peasants who produce grain. In recent years, most prices for agricultural and sidelines products have risen, yet grain prices basically have not moved at all. This has resulted in price distortions, and peasants who produce grain have received excessively small returns. Jiangxi peasants say: "Raising grain is not as good as raising melons; raising melons is not as good as panning beach sand; and panning beach sand is not as good as running tractors for transport." The closer an area is to a city or to a fairly well-developed commercial economy, the more this tendency is evident. Therefore, there should be strengthened leadership in grain production. There should also be policies that provide encouragement to peasants who produce grain. Material measures should be conscientiously implemented. There should also be great effort devoted to extending agricultural S&T to help peasants in the grain districts to transform their strengths in grain production into strengths in economics. There should also be expanded free-market redistribution of commercial grain. According to estimates by grain offices in Fujian, approximately 500 million kg of rice were moved from Jiangxi to Fujian through free-market channels. Jiangxi peasants received real benefits from this. In 1985, the state purchased grain at 31.18 yuan per 100 kg, yet the purchase price in unofficial rice markets was 36 to 46 yuan per 100 kg. Further expansion of the grain markets will help spur grain production and the motivation of the producers.

2. Expand interprovincial horizontal links. Beyond the base allocation provided in the state plan, the supply and demand of grain in the two provinces can be solved through use of horizontal economic links. The grain-supplying province can provide a steady source of grain to the other; and

the grain-receiving province can provide the other with material factors, such as funds, chemical fertilizer, construction projects for grain-producing bases, etc.

Fujian's experience also shows the suitability of interprovincial relations. Within the province, every county is treated as a separate unit. The local financial administration adds a 6-yuan subsidy to every net 100 kg of grain that is freed for outshipment. Of this, 4 yuan is provided by the province and 2 yuan is added by the locality to which it is redistributed. Whoever eats the grain must pay. About half of the 6 yuan subsidy is given directly to the peasants who sell the grain to the state. The remainder is used for extending superior seed varieties, expanding cultivation of green fertilizers, and other measures. This program has been successful because grain-producing districts and peasants fully welcome it. Using this method, grain-deficit districts along the coast that have relatively developed townwhip and town industries have taken some money and subsidized the commercial grain districts in the central and northern portions of the province where township and town industries are not very developed. "Industry Helping Agriculture" has been implemented on a fairly large scale. This has expanded production of commercial grain, and at the same time has spurred consuming districts to minimize their grain use. This is an experience that is worthy of attention.

In summary, there are three forms which can be selected from in interprovincial geographic redistribution of grain. The state reassignment of grain should be stabilized at a set base level; horizontal economic links between provinces should be established and enlarged; and free-market redistribution should be consolidated and expanded on a base of improved management. Based on the geographic balancing of grain, we must proceed in the strategic development of areas, considering comprehensively respective strengths and conditions. This will further improve the adjustment of the distribution and structure of production. This problem affects the entire economic situation. We hope that it will receive sufficient attention.

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CSO: 4007/509

JINGJI RIBAO ON DEVELOPMENT OF ARID NORTHWEST

OW251154 Beijing XINHUA in English 0832 GMT 25 Oct 86

[Text] Beijing, October 25 (XINHUA)--As a result of commodity production development in poor areas of northwest China, the standard of living is improving, today's "Economic Daily" reported.

The area, covering Xihaigu in southern Ningxia Hui autonomous region and Dingxi and Hexi in central Gansu Province on the loess plateau, has traditionally been plagued by serious soil erosion resulting from the indiscriminate felling of trees and destruction of pastures over the centuries.

With a population of seven million, it used to be classified a "poverty-stricken" area, where each peasant earned no more than a subsistance salary from collective work.

Local people have carried out the principle of "planting grass and trees to develop animal husbandry, transform the mountains and rivers, and eliminate poverty," proposed by party leader Hu Yaobang when he inspected the area in 1983.

Since then, trees and grass have been planted on more than 1.14 million hectares and 21 percent of the soil erosion area in central Gansu has been brought under control.

Tree and grass planting has boosted stock breeding, the paper said. Head of cattle, pig and sheep by the end of this year will increase 23 percent, 26.4 percent and 9.7 percent respectively over 1982.

Meat production will increase by 45.5 percent while wool and egg production will enjoy 15.7 percent and 49.3 percent increases.

Grain output in central Gansu and southern Ningxia in 1985 rose by 75.8 percent and 140 percent over 1982.

This year per capita income will see an increase of 5.6 percent over 1985, the paper said.

Encouraged by local governments, rural industrial businesses have also sprung up in the area over the past few years with output value up fives times over 1982.

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CSO: 4020/36

GANSU

READJUSTMENT OF AGRICULTURAL OUTPUT ADVOCATED

Beijing NONGMIN RIBAO in Chinese 9 Apr 86 p 2

[Article by Jia Zhijie [6328 18C7 2638], deputy secretary, Gansu CCP Committee: "Readjust the Mix of Rural Output; Straighten Out Internal Economic Relationships"]

[Text] Gansu had a good harvest last year even though some of the prefectures in our province suffered severe natural disasters. Gross agricultural output value reached 4.19 billion yuan, an increase of 8.1 percent over the previous year, and per capita net income increased 36 yuan.

Nevertheless, Gansu's rural per capita net income is the lowest in the nation, as is her per capita supply of grain, and she is the most impoverished in terms of insufficient clothing and food. So as we continue to implement the second step of our reforms this year, we must conscientiously carry out the spirit of Central Committee Document No 1, further readjust the mix of rural output and straighten out internal economic relationships.

I. We Must Correctly Handle the Relationships between Grass and Tree Planting, Diversified Farm Operations and Grain Production, Continue Planting Grass and Trees, Never Slacken Grain Production and Vigorously Diversify Farm Operations.

Grass and tree planting and the growth of animal husbandry comprise a strategic direction for Gansu's agricultural development and a focal point in the readjustment of output mix. The questions of how to ensure that grass and tree planting continue and how to coordinate grass and tree planting, growth in grain production and diversification of farm operations are matters that we must conscientiously resolve through practice. Our stress on increasing grain output by no means implies slackening in grass and tree planting. But on cultivated land we must first maintain the grain sown area, and we can appropriately decelerate withdrawal of land from cultivation. For the most part, grass and tree planting should be conducted on the "three wastelands," and we should increase rotation on grasslands.

In view of conditions in Gansu, we should establish targets and raise demands by region in our effort to increase grain output. For example, in the area east of the Yellow River, which is one of commodity grain production bases of the Northwest, and in the small concentrated grain production districts lying to the south and east of the Long River, we must vigorously diversify farm production and implement policies stimulating grain production so that these areas provide more commodity grain. Many areas south of the Yellow River have increased grain output and achieved grain self-sufficiency step by step by improving farm fields, changing cropping systems and increasing material inputs. But in areas that really lack the proper conditions for grain self-sufficiency--such as those having alpine, overcast and damp climates, or arid mountains, forests, or grazing or semi-agricultural, semi-grazing areas--we must plant grass and trees, develop animal husbandry, diversify farm production, resolve the grain problem by increasing economic income and not force these areas to be totally self-sufficient in grain.

II. We Must Correctly Handle the Relationship between Grass Growing and Animal Husbandry and Promote a New Breakthrough in Animal Husbandry.

In the past several years, Gansu has been able to plant grass on 14-plus million mu because the province has conscientiously carried out the strategic program proposed by Comrade Hu Yaobang to plant grass and trees and to development animal husbandry. But if we only demand grass planting and ignore animal raising, we will obtain only ecological benefits, which are indirect, and no economic benefits, which are direct, and the enthusiasm of the masses for grass planting cannot be sustained. We should adopt various effective measures to accelerate development of animal husbandry, such as the planned establishment of stud farms or having the state or collective provide credit sales or loans to peasants who have grass but cannot afford to buy sheep. In developing herbivorous animal and poultry raising, we must attach special importance to chickens, rabbits, bees and the like, which require little investment and yield rapid results. While helping millions of peasants develop the animal raising industry, we must concentrate our forces on the establishment of commercial animal husbandry bases. In developing this industry we must stress grass growing and animal raising and processing and marketing.

Meanwhile, we must also engage in multilevel value-added production, use sales to stimulate increased raising and raising to spur increased grass planting, and we must integrate planting, raising and processing. We must also vigorously promote the "three integrations"--namely, of grass planting, feed processing and animal breeding; of grazing, agricultural and suburban areas; and of breeding in grazing areas, fattening in agricultural areas and marketing in urban areas--so as to make the output mix more rational, accelerate turnover and increase production and income.

III. We Must Correctly Handle the Relationship between "without Agriculture There Will Be Instability" and "without Industry There Will Be No Enrichment," Keep Agriculture the Basis, Make Town and Township Enterprises the Salient and Promote Across-the-Board Development of the Rural Economy.

The backwardness of Gansu's rural economy is apparent in the backwardness of her agriculture but is most prominently manifested in the backwardness of her town and township enterprises. Last year we stressed town and township enterprises as a salient, directly increased income by establishing township enterprises and, more importantly, gave momentum to the entire rural economy.

This year town and township enterprises throughout the province must stress growth, speed and improvement and pay attention to the resolution of two kinds of problems--strengthening management and striving to improve economic results, and being very sure to maintain the enthusiasm of town and township enterprises. In correcting unhealthy practices, we must proceed from actual conditions, seek truth from facts and delineate policy boundaries. We must correct unhealthy practices, preserve the enthusiasm of the masses for running enterprises and promote even faster development among town and township enterprises.

IV. We Must Correctly Handle the Relationship between Current Production and Improving Basic Agricultural Conditions, Increase Investment and Ensure Continued and Stable Growth in Agriculture.

The rapid growth in the rural economy over the past several years was due to the decisive effects of the household production responsibility system and to the sudden release of productive potential accumulated through many years of capital construction and technological transformation in agriculture. The future trend in agriculture will be toward continued stable growth, and this growth will depend largely on steady improvement in agricultural productive conditions. Yet China's material and technological base is very fragile, state and collective inputs have declined in relative terms and agricultural production lacks sufficient logistical strength. In the last several years, policy has been good, Mother Nature has helped out, so agriculture has reaped successive bumper crops. All of this has concealed weaknesses in the agricultural base and led to a relaxation in capital construction of farm fields, resulting in serious aging of some hydraulic systems, failure to repair damage to these systems and reduction in irrigated area, and enthusiasm for construction of the "three fields" has declined in some arid mountainous regions. Gansu must stress current agricultural production and progressively increase agricultural inputs, but the province must strive to improve basic agricultural conditions as well. The funds the province needs to increase inputs should be raised from a variety of sources. In addition to annual increases in state investment, localities throughout the province must raise a corresponding amount of new funds, and during this year and next we must strive to achieve a ratio of 40 percent [vague, as published]. Cooperative economic organizations throughout the province must deduct accumulation and depreciation for fixed capital from their annual revenues, establish agricultural development funds and improve labor input systems. Areas in which town and township enterprises are well developed should continue to use industry to supplement agriculture. If we do these things for a number of years we are bound to achieve success.

12431
CSO: 4007/387

BRIEFS

SUMMER HARVEST--Beijing 11 Sep (XINHUA)--Farmers in Gansu Province in northwest China harvested 3.78 million tons of summer grain this year, 150,000 tons more than in 1985, an official of the local statistical bureau said. [Text] [Beijing XINHUA in English 0755 GMT 11 Sep 86 OW]

/9716
CSO: 4020/36

GUANGDONG HOLDS WATER CONSERVATION CONFERENCE

HK270528 Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 25 Sep 86

[Excerpts] The four day provincial conference on water conservation and hydroppwer work concluded in Zhongshen city today.

The conference demanded that all localities mobilize the masses to actively take part in water conservation construction, to increase the ability of water conservation facilities to supply water and resist natural disasters, and to ensure and promote the development of agriculture and national economy.

The conference held that since the founding of the PRC, the province has achieved remarkable results in water conservation and hydropower construction, with some 10 billion yuan spent on constructing water conservation facilities. This has laid a good material foundation for industrial and development in the province. However, water conservation facilities in some areas have been in disrepair for many years and their ability to resist natural disasters has been weakened.

The conference demanded that all localities implement the regulations stipulated by the central and provincial authorities on accumulating rural labor in water conservation construction and increasing water fees, conduct entrepreneurial management of water supply projects, turn water supplying into commodities, raise funds from all sides for water conservation construction, increase investment in water conservation construction, and exercise strict control over water by legal means.

The conference stressed that leaders at all levels must fully understand the importance of water conservation work. At present, they must take prompt action and organize the masses to set off an upsurge of water conservation construction this winter and next spring.

/12913
CSO: 4007/46

BRIEFS

WORK GROUPS TO DROUGHT-HIT AREAS--According to YANGCHENG WANBAO, the provincial government today organized three work groups which will go to drought-affected areas in northern, eastern, and western parts of Guangdong to help to solve problems in fighting drought. The autumn drought in the province has had a serious effect on the late crop. According to 26 September statistics from the provincial antidisaster command, the area of crops affected by drought has reached 11.26 million mu. At present 2.9 million peasants are working hard to fight drought and strive for a bumper harvest. This autumn, typhoon no. 16 brought heavy rainfall to Zhanjiang and Hainan, but other parts of the province have had very little rain. Precipitation has been about 30 percent below normal. Huiyang, Meixian, Shaoguan, Maoming, and Zhaoqing prefectures and cities are seriously affected by drought. [Text] [Guangzhou Guangdong Provincial Service in Mandarin 1000 GMT 28 Sep 86 HK] /12913

CSO: 4007/46

PRC STUDIES WATER LOSS FROM KARST FORMATIONS

OW081124 Beijing XINHUA in English 0707 GMT 8 Nov 86

[Text] Guiyang, 8 November (XINHUA)--Chinese scientists will join efforts to solve water loss problems on lime-stone based farmland at China's first karst research center in south China's Guizhou Province.

According to a provincial official, scientists are being invited to assist with this problem in the province, which is severely affected by karst formations.

Karst, an irregular layer of limestone, contains sinks, underground caverns and streams, and can cause water loss and drainage problems for farmers.

Over 70 percent of the cultivated land in Guizhou Province is covered by karst, ranking first in the country. Its 30 million people have always suffered from water shortages both for drinking and irrigation.

Karst experts from China's major cities of Beijing, Shanghai, Nanjing, and chengdu will concentrate their efforts on comprehensive control of karst and water leakage in the southern part of Puding County, the most serious sufferer in the province and the site of the research center.

"This type of research project has never been attempted by scientists in this country or anywhere in the world," the official said.

In addition to the invited scientists, other experts from all parts of the country are encouraged to come to the region. The province will offer materials on the region's geology, the general configuration of the earth's surface, hydrogeological data and local research results.

The local government started a research program on karst distribution, growth patterns and utilization in 1976. About 60 scientists attending a national meeting approved the program last May, and highly praised local efforts to control karst.

A number of water-supply projects such as power stations and reservoirs have been built in the hope of yielding social and economic results.

/12232
CSO: 4020/45

GUIZHOU

BRIEFS

GOOD RESULTS IN ASSISTING POOR--This year the province has achieved good results in assisting the poor. By reducing the peasants' burden, increasing investment in production, and upgrading the scientific and technological level of the masses, all localities have speeded up the work of assisting poor areas to overcome poverty and become rich. According to statistics of 24 poor countries, some 130 million yuan have been invested this year in production and construction projects to assist over 90,000 peasant households in developing farming and breeding. Assistance was mainly given to 100 industrial projects, and the province's output value has been increased by 120 million yuan. The province has thus achieved a net profit of 23 million yuan. To upgrade the scientific and technological level of poor areas, this year the province has also dispatched over 3,000 scientific and technological personnel to remote mountain areas where they trained local qualified personnel and published over 20 kinds of scientific and technological books including farming, breeding, mining, and the processing of agricultural and sideline products. Some poor households have thus acquired scientific and technological knowledge and become rich through labor. [Text] [Guiyang Guizhou Provincial Service in Mandarin 2300 GMT 20 Oct 86 HK]

/9716
CSO: 4007/56

LARGE FARMING CENTER BUILT IN HEILONGJIANG

OW221433 Beijing XINHUA in English 1208 GMT 22 Oct 86

[Text] Beijing, October 22 (XINHUA)--China's largest mechanized farming center, composed of 100 state farms, has been built on a plain in Heilongjiang Province over the past 40 years, the "Economic Daily" reported today.

The center on the Heilong-Songhua-Lengjiang river plain now boasts 140 towns, each with more than 3,000 residents; 3,000 villages; six colleges; 24 secondary vocational schools; and 2,300 middle and elementary schools. Among 36,000 technicians working there, 6,160 have middle and senior academic titles.

Since 1947, when demobilized soldiers began reclamation there, the agricultural and livestock farms, which cultivate two million hectares of farmland, have produced 49.5 million tons of grain and soybean, in addition to a great quantity of animal by-products. They have handed over a total of 1.7 billion yuan (460 million U.S. dollars) in taxes and profits to the state.

The farms have increased their degree of mechanization since 1978, when advanced machines, including seed and grain processing equipment, and water-conservancy facilities, began to be imported from the United States, the Federal Republic of Germany and Japan. In field management, the mechanization rate has now topped 90 percent.

Workers at the Honghe farm, one of three built with foreign funds, have the highest work efficiency in China. Each worker ploughs an average of 134.5 hectares.

Now the center is undertaking a 200,000-hectare land reclamation scheme which began in 1983 with loans from the World Bank. About 60 percent of river dikes, roads and power projects have been completed.

/9716
CSO: 4020/33

BRIEFS

SPECIALIZED HOUSEHOLDS DECLINE--At the end of 1985, more than 156,000 households in the province specialized in raising livestock. Based on a survey by the provincial animal husbandry bureau, in the first half of the year the number of households specializing in raising livestock declined by 43,684 over last year, or 27.9 percent. The major reasons for the decline include poor management, insufficient funds, and lack of support from concerned departments. Some households have noted that it is difficult to buy materials, difficult to borrow money, and difficult to sell their products. [Excerpts] [Harbin HEILONGJIANG RIBAO in Chinese 10 Oct 86 p 1] /12232

VEGETABLE HARVEST--Based on statistics, 10 major cities have sown 370,000 mu to cabbage, radishes, onions and other autumn crops (Not including potatoes), it is estimated that the volume of goods will be 650 million kilograms, an increase of 35 percent over last year. This year the estimated gross output of potatoes in the eight major producing counties is 997,000 tons, a 19.1 percent increase over the same period last year. [Excerpts] [Harbin HEILONGJIANG RIBAO in Chinese 5 Oct 86 p 1] /12232

POLICY PROMOTES CATTLE RAISING--Harbin, October 21 (XINHUA)--Heilongjiang Province, in northeast China, ranks first in the country in raising jersey cattle, a provincial agricultural official said today. The province has 288,000 head this year--double the figure in 1982. The province attributed this to the flexible policy adopted by the local government and improved services in the last four years. Apart from collective farms, individuals are also encouraged to raise cattle. Now, households with over eight head of cattle each number 1,500, two times the 1984 figure. The local authorities have also raised milk prices and allowed the peasants to barter milk for fodder. Meanwhile, the local government has set up an improved service network including fodder processing, milk purchasing and processing, and veterinary services. The province has invested 30 million yuan (about eight million U.S. dollars) in building a modern stock-breeding station which supplies frozen cattle sperm to a dozen other provinces. [Text] [Beijing XINHUA in English 0856 GMT 21 Oct 86 OW]

/9716
CSO: 4020/33

BRIEFS

EMERGENCY MEASURES TO PREVENT FIRE--Wuhan, 15 November (XINHUA)--South China's Hubei Province has taken three emergency measures to prevent further loss due to forest fires which have already caused heavy losses, according to a local official. The measures include stepping up forest fire-control education among local leaders and residents, a complete fire-control network and punishing those who are found responsible for fires. During the 7 months from November 1985 to May 1986, 1,054 fires broke out in the province. They burned 10 million trees on 23,400 hectares of land. Seventy-three fires were classified as major. The number of fires was 3.4 times higher than the average figure for the previous 5 years, the official said. The local government attributed the fires to careless forestry protection and poor fire preventive measures. [Text] [Beijing XINHUA in English 1035 GMT 15 Nov 86 OW] /12232

CSO: 4020/45

CIRCULAR ON DROUGHT ISSUED BY PROVINCE

OW250731 Nanjing Jiangsu Provincial Service in Mandarin 1100 GMT 23 Oct 86

[Text] The Jiangsu Provincial People's Government issued a circular on 21 October calling on all localities to take measures against the drought and for successful autumn sowing.

The circular says: Drought has affected our province consistently since August because there has been little rainfall. In spite of the fact that drought has eased up to some extent in the area north of the Huai He, it is spreading south of the river and in the hilly areas, seriously affecting autumn sowing and seeding emergence. In many areas, the drought has caused the seedlings to either wither after sprouting or sprouting unevenly.

In view of this, the provincial government calls on all localities to concentrate forces and strengthen leadership over autumn sowing at this juncture, which is crucial to sowing. Leaders at all levels in the areas of serious drought should work on the frontline to combat drought, studying and implementing the measures needed to deal with the drought. Departments in charge of agriculture should step up technical guidance, vigorously popularize wheat varieties that require little or no plowing, and make sure furrows in the fields are opened well so they can cope with the weather, whether it rains or not. Industrial enterprises in areas seriously affected by drought should yield their electricity supply. All localities should step up shipment of oil to combat the drought. Hilly areas should make active efforts to pump up water. Areas along the Chang Jiang should channel water into the fields in good time to make sure there is enough water to cope with the drought.

/9716
CSO: 4007/56

FARMERS IN NORTHEAST PLANT MORE FRUIT TREES

OW071220 Beijing XINHUA in English 0754 GMT 7 Nov 86

[Text] Zhenyang, 7 November (XINHUA)--Farmers in northeast China's Liaoning Province have discovered that planting fruit trees is a surefire way to get rich, according to a local agricultural official.

They planted more than 58 million fruit trees this year in this province which has a population of 36 million, the official told XINHUA today.

The target of the provincial government is to expand the 1 million tons of fruit output this year to 2.1 million tons by 1990.

The emergence of the fruit growing rush was largely attributed to the price reform conducted since 1984.

As a major fruit producer in China, Liaoning province supplies 30 percent of the country's apples.

Before 1984, prices of major fruits like apples, pears, peaches were decided by the government. Gorwers were allowed to sell only the remaining part of their harvest above the quota set by commercial departments. And fruit prices usually fell behind its productive costs.

Now the prices of fruits produced by collective and individual peasants are allowed to float with market conditions, which used to be agreed between the seller and purchaser.

In the past 3 years prices have doubled for major fruits in Liaoning. However, fruit consumption is still steadily rising 10 percent annually, the official said.

He said both rural and urban residents are able to eat more fruit with increased income.

Under the responsibility system, farmers take good care of the fruit trees, which are owned by the collective, and give the state a settled amount of money from selling the fruits at the end of each harvest.

More farmers are willing to sign contracts with local authorities for growing fruits, for they found they can make bigger profits out of selling fruits than selling grain.

Now the provincial government has decided to prolong the original 10-year contract with the fruit growers.

It also allowed farmers to own and sell fruit trees they planted on barren lands as another sign of encouragement.

As a result, farmers greened barren hills and also decorated their courtyards with fruit trees.

Eager to improve their skills of fruit growing, they also flocked to lectures and training classes which were held in the more than 30 fruit-producing counties in the province's south and west. There are nearly 20,000 fruit technicians, the official said.

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CSO: 4020/45

NEI MONGGOL

HOUSEHOLD PASTURELAND SAID FLOURISHING

OW071106 Beijing XINHUA in English 0652 GMT 7 Nov 86

[Text] Hohhot, 7 November (XINHUA)--Household pastureland is flourishing on the Hulun Buir grasslands in North China's Inner Mongolia Autonomous Region.

Now the grasslands boast more than 1,000 household grazing lands, involving about one-thrid of the total herdsmen, said a regional official.

"They bring new hope to the modernization program of Chinese prairies," he said.

Hulun Buir grasslands, the third largest natural fine pasturelands in the world and the birthplace of nomadic tribes in north China, now has about 10 million hectares of grasslands, accounting for 12.5 percent of the total in Inner Mongolia.

Before 1982, herdsmen here kept following the traditional backward nomadic way, local officials said, adding, "it is the reform initiated by Chinese top leader Deng Xiaoping that enlivens the grasslands which had sealed itself off for years."

The first household pastureland was set up jointly by Zhundi and Dawa in 1982 when reform in the pastoral area began. Their pastureland, covering an area of 933 hectares, had only two tractors and less than 50,000 yuan (13,500 U.S. dollars) in property.

To get rid of the onerous manual labor, Zhundi and Dawa, who had machine maintenance technical know-how, borrowed money from the local government to buy tools and machine parts.

They built two cattle sheds and fences which covered an area of 260 square meters and set up permanent houses, quitting the nomadic way.

After several years of efforts, the size of the pastureland became bigger and bigger. Now Zhundi and Dawa have two combines, nine tractors of different types and 20 other tools for herding.

They also planted more than 10,000 trees around a fodder production base covering 260 hectares, and grew 133 hectares of oats and some other herbage and fodder.

The pastureland owners said they now have more than 200 cattle and dairy cows, 460 sheep and 30 horses. "We can sell more than 320 kilograms of commodity milk every day," they said.

"We have 350,000 yuan (88,500 U.S. dollars) in fixed assets, and our annual per capita income is as high as 3,000 yuan (710 U.S. dollars)," they added.

Now the household pasturelands on the Hulun Buir grasslands are mainly engaged in raising cows, and their annual per capita income is above 1,000 yuan (270 U.S. dollars), according to local officials.

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CSO: 4020/45

NEI MONGGOL

BRIEFS

WOOL PROCUREMENT--Nei Monggol Autonomous Region has prefulfilled its wool procurement plan by 3 months. The volume of procured sheep wool is equal to the figure of the corresponding 1985 period, and that of cashmere showed a 3.3 percent increase over the figure for the corresponding 1985 period. According to statistics, by the end of 1986 the total volume of procured sheep wool is expected to reach more than 43,700 tons, and that of cashmere 1,450 tons. All this may saturate the demand of the wool textile enterprises throughout the region. [Excerpts] [Hohhot Nei Monggol Regional Service in Mandarin 1100 GMT 12 Oct 86 SK] /12232

CSO: 4007/62

BRIEFS

WATER CONSERVANCY EXPENDITURES__Water resources departments of our province have drawn up specific and detailed plans for building and improving 104 water conservancy projects during the winter and coming spring with an allocation of 5.5 million yuan. The money will be mainly used to repair some damaged projects, build a conveyance system, and improve irrigation canals. With the completion fo these projects, 180,000 mu of farmland will be irrigated and there will be an increase of 11,450 kilowatts of electricity generated by small hydropower stations in farming and pastoral areas. [Text] [Xining Qinghai Provincial Service in Mandarin 2330 GMT 23 Oct 86 HK] /12232

CATTLE, SHEEP PROCUREMENT--By 2 October, Qinghai Province had procured some 430,180 head of cattle and sheep and 6,539 tons of beef and mutton had been supplied to the province. The amount of beef and mutton supplied to the province in this period was 21.05 percent more than in the same period last year. [Summary] [Xining Qinghai Provincial Service in Mandarin 2330 GMT 27 Oct 86 HK] /12232

CSO: 4007/62

RURAL ADVANCEMENT IN SCIENCE, TECHNOLOGY PLANNED

HK080911 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 4 Oct 86

[Excerpts] In order to swiftly develop rural productive forces and speed up economic development in the province's rural areas, the provincial party committee and government recently formulated a plan for promoting scientific and technological advancement in the rural areas during the 7th 5-Year Plan period. The basic guiding thinking of the plan is to send science and technology to the rural areas through organized work so as to promote the move of science and technology from urban to rural areas and from advanced to backward areas; to turn science and technology into a productive force as quickly as possible; and to use advanced science and technology to transform agriculture, arm township enterprises, and speed up the process of upgrading the rural productive forces.

The plan points out that to bring about scientific and technological advancement in the rural areas, it is necessary to put agriculture in an important strategic position and to vigorously develop diversified economy and township enterprises on the basis of ensuring a steady growth in grain production, so as to promote further readjustment of the rural production structure.

The plan demands that the province develop science and technology centering on the general target of quadrupling its total industrial and agricultural output value; catch up with, equal, and surpass by 1990 the national average level in the per unit yield and quality in crops, livestock, and poultry products; increase the proportion of its forest area from 22.2 to over 27 percent; increase the current ratio between agricultural output value and industrial sideline production output value in the rural areas from 1:1 to 1:5; basically change the situation of rural areas producing elementary products; upgrade the province's agricultural science and technology level to the nation's average or advanced level; and strive to catch up with the advanced level of economically developed areas. In agriculture, on the basis of self-sufficiency in grain, the province must attain the target of being self-supporting in edible oil in 3 years, and the target of annual grain output of 22 billion jin and annual oil crop output of 7.5 million dan by the end of the 7th 5-Year Plan. In animal husbandry, the proportion of the output value of animal husbandry in the total agricultural output value should reach 17 percent, and efforts should be made to gradually catch up with the national level. In forestry, the province's annual timber output must be increased from 500,000 cubic meters to 800,000 cubic meters. The province's annual forestry output value must be increased from 680 million yuan to 1.1 billion yuan. The annual output value of the province's township enterprises should reach 10 billion yuan.

The plan also put forth specific requirements in the area of developing and promoting technological projects, organizing people to send science and technology to the rural areas, and upgrading peasants' intellectual level and labor quality.

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CSO: 4007/49

BRIEFS

BUMPER COTTON HARVEST--Despite the autumn drought bringing difficulties to the work of grain growing and autumn sowing, the province reaped a bumper cotton harvest this year. The average amount of cotton ginned per unit area from the 24 counties' and cities' 730,000 mu of cotton fields was more than 40 kilograms, reaching an all time high. Compared to recent years, this year the province has reaped its best cotton harvest and produced the best quality cotton. [Summary] [Xian Shaanxi Provincial Service in Mandarin 0030 GMT 20 Oct 86 HK] /12232

CSO: 4007/62

SHANGHAI

BRIEFS

FUNDS TO AID GRAIN PRODUCTION--Shanghai, October 26 (XINHUA)--Shanghai, China's leading industrial center, has allocated a special sum of 125 million yuan (33.7 million U.S. dollars) to boost grain production between 1986 and 1990, according to the municipal agricultural department. This is the largest sum of funds the city has earmarked for grain production in the past 37 years, a bureau official said. Shanghai has ten suburban counties inhabited by 5.1 million people, with 360,000 hectares of cultivated land. These funds will be used to help upgrade water conservation facilities, purchase farm machines, set up stock seed breeding bases, aid villages and households specializing in seed-breeding and transform waterlogged lowland. So far, 25 million yuan (6.7 million U.S. dollars) has been distributed to 79 major grain-growing townships and 33 seed-breeding farms. According to the official, a 200-kilometer underground aqueduct will be dug and waterlogged lowland transformed in the coming winter and spring. [Text] [Beijing XINHUA in English 0736 GMT 26 Oct 86 OW]

/9716
CSO: 4020/36

AGRICULTURAL DEVELOPMENT STRATEGY FORMULATED

HK260727 Taiyuan Shanxi Provincial Service in Mandarin 2300 GMT 19 Oct 86

[Excerpts] A solution is now found to solve the long-standing problem of how to develop the province's agriculture development. The provincial agricultural planning commission, assisted by the experts concerned, has drafted the province's overall agricultural plan after over 1 year's work. The plan spells out a way of rationally readjusting the province's rural industrial structure, as well as giving specific guidance of macroscopic administration over agriculture.

Such a soft scientific study as the province's agricultural overall planning was started in May 1984 in order to develop the province's agriculture. It was completed in June 1985. In connection with the actual conditions, the planning department repeatedly revised its plans, which were formulated after discussing the province's nine different strategic plans on agricultural development. The department inputed the nine plans into the computer, and analyzed year by year the projected results of the plans by the year 2017 in terms of economic results, social benefits and ecological results. Through the analysis, it selected the best one.

The present plan is the best strategic one which conforms to the province's development of building energy, heavy industry and chemical industry bases. The strategic principle of the plan in developing agriculture is to greatly develop rural industries and sideline production on a household basis; to continue to strengthen the development of farming industry and forestry; and to promote the development of animal husbandry.

The investment proportion in the province's agriculture, forestry, animal husbandry, as well as industry and sideline production industry projected by the principle should be respectively 30, 25, 10 and 35 percent of the province's gross annual investment sum. Thus, the province has found a solution for the development direction of agriculture. The overall plan also preliminarily discussed the issue of exercising macroscopic administration over agriculture, and worked out the maximum and minimum limits of the administration.

The overall plan was formulated on the basis of a simplified overall agricultural planning study; and by using the method of systems engineering, the dialectical method, the theory of open systems, and mathematics modules and computers.

/9716
CSO: 4007/56

WATER CONSERVANCY CONFERENCE

HK222103 Taiyuan Shanxi Provincial Service in Mandarin 2300 GMT 16 Oct 86

[Excerpts] Yesterday [16 October] evening, the provincial government held a telephone conference on mobilizing the rural areas throughout the province to engage in water conservancy construction. Vice Governor Guo Yuhuai spoke. Responsible comrades of Yuncheng and Luliang administrative commissioner's offices and the southern suburbs of Taiyuan City respectively introduced their experiences.

Guo Yuhuai pointed out: Our province now has two problems in water conservancy construction:

1. Lack of water has become more and more serious. The amount of water needed has now reached 1 billion tons. This has become a very big factor in restricting our province's economic development.

2. Water conservancy facilities have become old and are seriously out of repair.

In view of this, the provincial party committee and provincial government have studied and decided that this winter and next spring, we must further strengthen organization and leadership and extensively mobilize the masses to whip up an upsurge in large-scale water conservancy construction within our province. Our general task is to complete the specific arrangements made by the Provincial Water Conservancy Department for water conservancy construction this winter and next spring, that is, repairing 20,000 water conservancy facilities and 10,000 sets of mechanical and electrical equipment, restoring irrigated areas of 300,000 mu, and levelling paddy fields of 4 million mu.

The conference made detailed arrangements for this main task and demanded that governments at all levels seriously study specific measures and work hard to implement the spirit of this conference and completely carry out the tasks of water conservancy construction.

/9599
CSO: 4007/49

SICHUAN

PLASTIC-COVER RICE SEEDLING CULTIVATION DESCRIBED, PRAISED

Beijing NONGMIN RIBAO in Chinese 7 Apr 86 p 2

[Article by Li Yujia [2621 0060 0857], Crop Institute, Sichuan Academy of Agricultural Sciences: "The Technique of Using Plastic-Sheet Covers in Seedling Cultivation Proves Very Effective in Increasing Rice Output"]

[Text] In recent years the new technique of using plastic-sheet covers in seedling cultivation has been tested, demonstrated and disseminated throughout Sichuan, proved extraordinarily effective in raising rice output and, as of 1985, been applied on an area of more than 10 million mu. Results indicate that the technique is just as effective as hothouses in ensuring timely sowing, preventing seed and seedling rot, yielding sturdy sprouts and accelerating heading. And the technique has also proved to reduce energy consumption and costs and to be simple, convenient, suitable for individual household farming and thus very popular among peasants.

The most effective and widely used plastic-cover rice-seedling cultivation approaches in Sichuan are the wet and dry techniques. The former is good for growing small early rice and middle-season rice seedlings, medium seedlings of early and middle-season rice that are planted directly, small middle-season rice seedlings that are planted in two stages and large sprouts that are planted once. The dry cultivation technique is suitable for growing small sprouts that are planted directly or in two stages. Small and medium sprouts grown under plastic covers can be planted in winter paddies or in green-manure fields or as early-ripening small spring crops. Multitillering seedlings so grown can be planted as late-ripening small spring crops or in deep winter paddies, cold-soaked sodden fields, fields holding stored water, open fields and other fields that are planted late.

Wet beds should be placed in green-manure or shallow winter paddies that are of medium fertility and shielded from wind, have convenient water supply and few weeds and face sunlight. Each row should be made 4 to 4.5 chi wide and each furrow about 1 chi wide. Dry beds should be located in fertile loam fields that face sunlight, are shielded from wind and have convenient water supply. These beds should be finely raked and leveled. Each row should be 4 to 4.5 chi wide, and around each row a 1- to 2-cun bank should be built up, forming a shallow pit of sorts. The length of the bed should be determined by the amount of seeds to be planted, and the banks should be tamped tightly and solidly and evened off in height so as to facilitate placement of the plastic covers.

Seeds should be cleaned and disinfected so as to improve germination, and sowing should begin as soon as the average daily outside temperature stabilizes at 10° C or above. That is, in the flat hills of the northeastern part of the basin, the sowing period should be from 20 Mar to 5 Apr; in the hills of the central part of the basin, from 15 to 30 Mar; in the hills of the eastern part of the basin, 5 to 25 Mar; and in the mountains around the basin, 25 Mar to 15 April.

For each mu (net area) of wet beds, 500-600 jin of seeds (that is, about 8 qian to 1 liang per square chi) should be sown; for each mu of dry beds, 400 jin (about 7 qian per square chi); for each mu of medium seedlings, 100-150 jin (about 1.7-2.5 qian per square chi); and normally for each mu of large seedlings, 15-20 jin (about 0.3-0.4 qian per square chi). Once the seeds are sown, low arched frames should be erected so that the apex of the frame arch stands 5 to 6 cun above the row surface, and bamboo sticks should be spaced every 1.5 to 2 chi. Plastic sheet covers should be placed on top of the frames and tightly sealed to the ground with mud so as to keep the heat in and prevent the covers from being blown away by strong winds. To stimulate growth, the covers should be kept sealed and warmth maintained until all seedlings sprout and turn green. Once the seedlings have sprouted, temperature inside the covers should be carefully observed. On sunny days, when interior temperatures rise above 32° C, the covers should be promptly removed. The timing of transplantation should be set according to leaf age. Small sprouts that are to be planted in two stages should be transplanted no later than the age of 1.5 leaves; directly planted small sprouts, 1.5 to 2 leaves; medium seedlings, 3.5-5 leaves; and large seedlings, 7-8 leaves. To improve survival rates, sprouts should be transplanted with mud still attached to their roots, and their fields should be flooded with a shallow amount of water.

12431
CSO: 4007/387

SICHUAN

BRIEFS

AGRICULTURAL SOCIETIES THRIVE--Chengdu, October 22 (XINHUA)--Agricultural technology societies have long been regarded as the school to help peasants become more affluent. Nearly 10,000 such societies have been set up, according to an official of the Sichuan Provincial Association for Science and Technology. With a total membership of 260,000, 80 percent are from peasant households specializing in farming, animal husbandry and fisheries. China's rural economic reform encouraged peasants to increase commodity production. As a result, peasants were more eager to learn new ways of gaining marketing information. "It's the agricultural technology society that are capable of teaching peasants," said Lin Lin, deputy president of Sichuan Academy of Social Sciences. The societies were organized by two or more peasant households who specialized in various fields and who agreed to pool their funds. Thanks to the establishment of such societies, Lin said, science and technology are spreading very fast in the countryside. For example, in the town of Xinqiao in Dazhu County, a research institute for raising pigs offered lectures to its members on how to fatten pigs faster. After the course they sold 40 percent more pigs the following year and the income of peasants in the town increased by 160,000 yuan. [Text] [Beijing XINHUA in English 0211 GMT 22 Oct 86 OW]

/9716
CSO: 4020/33

TIANJIN

BRIEFS

GRAIN OUTPUT--According to initial estimates, this year the gross grain output of Tianjin Municipality will reach 1.475 billion kg, 70 million kg more than that of 1985; and the per-unit yield will reach 215 kg, 5 kg more than the 1985 figure. Both figures will be record highs. [Summary] [Tianjin TIANJIN RIBAO in Chinese 26 Sep 86 p 1 SK] /12232

CSO: 4007/62

XINJIANG

BRIEFS

GOODS DISTRIBUTED THROUGHOUT PRC--Beijing, 7 November (XINHUA)--The multinational Xinjiang Uygur Autonomous Region has plans to distribute surplus grain to other provinces this year after eliminating the need for state grain subsidies. The announcement was made at a Xinjiang regional economic and social development strategy discussion which opened here Thursday. Xinjiang, a region now self-sufficient in grain, received financial aid of 17.4 billion yuan (4.7 billion U.S. dollars) and another 13.1 billion yuan (3.5 billion U.S. dollars) in capital construction from the state between 1950 and 1985. Between 1972 and 1983, it received 1,750 million kilograms of grain from the state. The region reached self-sufficiency level in 1984, and because of this year's good harvest, it plans to provide 500 million kilograms to other provinces. [Text] [Beijing XINHUA in English 0926 GMT 7 Nov 86 OW] /12232

MARKET THRIVES--The amount of commodities purchased by the commercial and the supply and marketing systems of Xinjiang Region from January to September this year were 4.1 percent and 3.11 percent more than in the same period last year, and the amount of commodities sold were 5.4 percent and 24.55 percent more than in the corresponding period last year. The region fulfilled 67 percent of the quota for grain ordered by contract. The amount of exports was up 20.7 percent. The amount of revenue by the end of September was 740 million yuan, which accounts for 80.5 percent of the annual quota. Calculated on the basis of comparable items, the amount of revenue recorded an increase of 9.8 percent over the same period last year. The amount of money put into circulation was some 24 million yuan less than in the same period last year. [Summary] [Urumqi Xinjiang Regional Service in Mandarin 1300 GMT 21 Oct 86 HK] /12232

CSO: 4007/62

GRAPE-GROWING INTRODUCED TO XIZANG REGION

OW210416 Beijing XINHUA in English 0237 GMT 21 Oct 86

[Text] Beijing, October 21 (XINHUA)--The Tibetan people living on the "roof of the world", can now eat fresh grapes grown in the autonomous region for the first time in history.

Du Bingjun, director of the Tibetan Science and Technology Information Service Institute, got the idea of growing grapes in greenhouses on the frigid Tibetan plateau.

"So I introduced 2,000 grape seedlings from Heilongjiang Province, northeast China, to the more than 3,600-meter altitude of Lhasa, capital of Tibet," Du said.

In July last year bunches of purple grapes ripened. "This summer, the grapes were so large that four or five would weigh as much as 100 grams. The sugar content is next only to that of grapes produced in the Xinjiang Uygur autonomous region, the center of China's grape-growing industry," he added.

The Tibetan people are still more gratified with being able to eat zanba.

Zanba, a roasted barley flour, is the staple food of the Tibetan people, but due to the energy shortage in the region, many people have difficulties in roasting it.

At a nationwide exhibition of science and technology in 1984, the institute found that the people of the Inner Mongolian autonomous region, who love to eat roasted rice, displayed a rice-roaster. So they asked the Mongolians to develop a zanba-roaster and it was a success.

According to Du, a production line to turn out zanba-roasters will go to operation next year.

Moreover, in energy-short Tibet, there are no baked bricks, so cement blocks are used instead. Last year, the institute learned that Jiangxi Province in central China had a method of producing bricks by drying them naturally. The technique was imported and now Tibet produces its own bricks without wasting energy and using local materials.

Small hydroelectric generators which can generate 15 kwh of electricity a day, enough to satisfy the daily needs of a household, were imported from Jiangsu Province to help the region utilise its abundant water resources.

China now has more than 3,800 scientific and technical information institutes of various sizes and at different levels throughout the country, employing 68,000 people.

/9716
CSO: 4020/33

SPECIALIZED PEASANTS BOOST CONTRACT FARMING

OW180438 Beijing XINHUA in English 0128 GMT 18 Oct 86

[Text] Hangzhou, October 18 (XINHUA)--Farmer Wang Zhangde of east China's Zhejiang Province produces as much grain from his land as when it used to be farmed by 16 peasants.

Wang and his wife reap 20 tons of grain every year from 1.4 hectares of land which were assigned to them as part of a new program contracting farmland to those peasants with a knack for farming.

Wang, 45, a good hand at farming and former head of the village science group, also supplies 50 pigs to the village every year, and has exceeded grain and pig production quotas contracted with his village three times in the past three years.

Those peasants, who previously worked the same land, have been transferred to factories run by villages and towns.

"In Zhejiang, it is an increasing tendency to contract more and more farmland to peasants who are good at grain cultivation," a local official said.

"They can produce more grain with fewer hands than before, and this has enabled more and more peasants to go and work in rural enterprises," an official from the agriculture bureau of the Shengxian County, where Wang's village is located, reported.

In Zhejiang Province, an average able peasant can produce five tons of grain every year, or subsistence level for 30 people, which is a much higher rate of efficiency, according to Shen Zulun, vice-governor of the province.

"Because many of the peasants who have contracted farmland are experienced in farming know-how, they have the courage to invest a lot in farm machines, tools and soil improvement," the official added.

In 1984, Wu Gende, 49, in another county in Zhejiang, contracted 3.7 hectares of poor quality land for 15 years. He has spent 10,000 yuan (2,700 U.S. dollars) buying farm machinery, tools and materials to improve the soil.

As a result, his family of nine has earned more than 30,000 yuan (8,100 U.S. dollars) by selling 90 tons of grain and other sideline produce in the past three years.

Since 1984, Wu and 5,000 other peasants have contracted 4,600 hectares of farmland, one-fourth of Yinxian County's grain-producing land, said Weng Lihua, head of the county.

Weng said his county is expected to distribute half of its 20,000 hectares of grain producing land to 10,000 peasants good at grain-growing in the next two years.

/9716
CSO: 4020/33

BRIEFS

HIGH-QUALITY WATER DISCOVERED--Hangzhou, 15 November (XINHUA)--Chinese and Japanese researchers have located a high-quality natural spring in northern Zhejiang Province, a local official said today. Repeated tests on the Jinsha spring, located in Shuikou Township, Changxing County, shows the water contains almost all necessary trace elements. "There are very few harmful elements," he said, adding each liter of the water has sodium levels only between 1.7 and 2.3 milligrams. The discovery has inspired local authorities to develop enterprises to utilize the daily flow of more than 3 million liters. [Text] [Beijing XINHUA in English 0241 GMT 15 Nov 86 OW] /12232

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546-642-87

108 pgs
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JPRS-CAG-86-041

30 DECEMBER 1986

China Report

AGRICULTURE

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AGRICULTURE

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VILLAGE ENTERPRISES SURPASS AGRICULTURE IN OUTPUT

OW141001 Beijing XINHUA Domestic Service in Chinese 0317 GMT 13 Nov 86

[Text] Beijing, 13 November (XINHUA)--(Reporters Shao Yongli and Zhou Yichang) At the current national conference on agricultural work, called by the Ministry of Agriculture, Animal Husbandry and Fishery, it was disclosed that this year the total output of China's village and town enterprises will surpass that of China's agriculture for the first time.

The value of the total output of China's village and town enterprises is expected to be over 330 billion yuan this year, an increase of 31 percent over last year, and will surpass that of agriculture for the first time.

Total employment in China's village and town enterprises has reached 76 million people, 20 percent of the nation's rural labor force, this is an increase of over 6 million over last year.

Thanks to the rural economic reform of recent years, village and town enterprises have sprung up everywhere, like mushrooms. Their numbers have shot up from over 1.42 million in 1980 to 12.2 million today. Their total output value accounts for 44 percent of the total social output value of rural areas. Village and town enterprises' total annual industrial output today is equal to the nation's total industrial output value for 1969. Since the beginning of this year, village and town etnerprises in various localities have overcome numerous difficulties and have maintained steady and fast growth. Many provinces and prefectures regard their developing village and town enterpriese as the key to revitalizing the rural economy and to readjusting the rural economic structure, and they have strengthened their leadership for this task. While vigorously developing village and town enterprises, these provinces and prefecture also stress quality, management, and the economic results of the village and town enterprises. They have readjusted village and town enterprises' professional structures, strengthened their lateral economic cooperation, and improved their technological levels. Many localities have even formulated specific plans to ensure health development in villages and town enterprises.

/12232
CSO: 4007/68

FARMLAND RECLAMATION SHOWS STEADY PROGRESS

OW221110 Beijing XINHUA Domestic Service in Chinese 1145 GMT 18 Nov 86

[By reporter Pu Liye]

[Excerpts] Beijing, 18 November (XINHUA)--[Words indistinct] The total industrial and agricultural output value of farmland reclamation departments this year is estimated at 18,546 million yuan. This is equivalent to 103.6 percent of the projected amount and shows a 10.8 percent rise compared with last year's figure. The output of grain and soybeans will be 7,879,000 metric tons, or 100.1 percent of the target and 12.8 percent more than last year.

During the past few years, farmland reclamation enterprises have promoted the operation of family farms by their staff members and workers as a measure to improve their work and carried out a host of major reforms, such as the implementation of the financial responsibility system, the combination of agriculture, industry, and commerce, and the system of contracted responsibility linking remuneration with output. This has put an end to the phenomenon of operating at a deficit that has persisted for 12 consecutive years in the farmland reclamation sector of our economy and brought about four changes as follows:

1. The family farms run by staff members and workers have increased in number--at the beginning they were only experminental farms in a few places; now they can be found everywhere. The operational system characterized by a big farm composed of many small farms has come into being in the initial form. In developing family farms in various places, attention has been paid to combining the advantages of family business and farm mechanization. As a result, it has been possible to better utilize the labor force, take advantage of large-scale operations, and benefit from advanced technology.

2. The economy has developed from the closed type to the open type, and a multiform and multilayered mode of economic association has begun to appear.

3. Both the structure of agriculture and the structure of production are being steadily readjusted, and the proportion of the industrial output value of farmland reclamation departments to their total industrial and agricultural output value is rapidly increasing. It is estimated that their industrial output value in 1986 will amount to some 9.8 billion yuan and approximately account for 53 percent of their total industrial and agricultural output value.

4. In management, a unified process of production, processing and marketing has been established step by step, and production and marketing have gradually become coordinated with each other.

In the 7 years 1979-1986, farmland reclamation departments in China earned a total of 4.5 billion yuan to the state. During the Sixth 5-Year Plan, their total industrial and agricultural output value increased at an average annual rate of 10.8 percent. Facts show that the economy of the farmland reclamation departments in China has entered a stage of steady and coordinated development. In this year, the farmland reclamation departments, seriously implementing the guidelines of the documents adopted by the central authorities, have further enhanced the enthusiasm of their cadres and workers. It is estimated that their profits will amount to 890 million yuan this year, despite higher prices of the means of production, higher wages and the natural disasters that distressed some reclamation areas.

/12232
CSO: 4007/68

BEIJING RADIO SAYS RURAL REFORM TO BE CONTINUED

OW241425 Beijing Domestic Service in Mandarin 1200 GMT 20 Nov 86

[Station commentary: "Reform Will Remain a Major Rural Task in the Future"]

[Text] Since the introduction of the system of contracted responsibilities on the household basis with remuneration linked to output, the economic reform in rural areas has undergone two stages and lasted for 5 or 6 years. As time passes by, people have had sufficient facts as evidence for the success of this reform. No one can deny that the situation in China's countryside today is surely becoming better and better.

Faced with this situation, some comrades think what we have done is good enough. In their opinion, nothing remains to be done in rural reform, except for some corrective and supplementary jobs. In fact, this idea is by no means acceptable. We have depended on reform to create an excellent situation in our rural areas. To develop this excellent situation, we still have to depend on reform.

For a certain period from now on, all localities should develop and invigorate the rural commodity economy as the key task of reform while continuing their unremitting efforts at grain production. They should vigorously set up targets, formulate policies, and do a great deal of work in connection with this key task. The primary work to be done at present is to provide peasants with still better services before, during and after production and to develop a multilayered socialized service trade in rural areas involving various economic sectors and operational forms. Success in this work will not only help consolidate the fruitful results of rural reform in the past few years, but will also radically stimulate the transformation of the natural rural economy to a commodity economy. In addition, our country's question regarding market is a question of rural market, in the final analysis. Invigorating the circulation of commodities in rural areas is of vital significance to the whole national economy. In view of this, it is hoped that our comrades doing rural work in all localities will pay more attention to the reform of the rural commodity-circulation system in the coming year or for an even longer time to come.

It should be made clear that all our reform measures implemented in rural areas should be based on the principle of continuously increasing the peasants' income. The reforms carried out over the past few years have given certain benefits to peasants. No departments and units should take back these benefits in one way or another. It should be noted that only when the peasants have a better income can they spend more on agriculture, and this is the only way to increase the rural market capacity. In a certain sense, to keep the upward trend of the peasants' income is to ensure an upward trend of the growth of the national economy.

To sum up, we should continue to persist in reform and, while ensuring a fairly big increase in grain production, promote the all-round development of the commodity economy and bring about a sustained and steady economic growth in rural areas. This will be the general framework of our next year's rural work. It is hoped that all comrades devoted to rural reform will continue to give play to their talent and resourcefulness so as to further the work of rural reform.

/8309
CSO: 4007/70

VILLAGE MARKET STRESSED FOR INDUSTRIAL PRODUCTS

OW221030 Beijing XINHUA Domestic Service in Chinese 0019 GMT 21 Nov 86

[Excerpts] Beijing, 21 Nov (XINHUA)--Report by XINHUA reporter Chen Yun: The Importance of the Countryside as Major Markets for Industrial Products Must Not Be Underestimated.

Autumn is over. The peasants have more cash on hand after harvest and need to make some purchases. Markets in the countryside are entering a busy season. But, according to this reporter's understanding, it is still relatively difficult for peasants to get access to needed commodities due to many obstacles hindering the distribution of industrial products to the countryside. This problem needs to be addressed urgently.

Many causes, including ideological ones and reasons of working or objective conditions, have hindered the free flow of industrial products to the countryside. Since commodity control became relaxed and commodity allocation became freer, some commercial departments and enterprises have stopped handling the supply of industrial products to the countryside under the mistaken impression that there are now more channels for the flow of commodities between cities and towns and that state-run businesses no longer have to undertake the tasks of distributing industrial products to the countryside. This misunderstanding has led to neglect of the distribution of industrial products to the countryside.

Both commercial departments and industrial production departments are to blame for causing the difficulties of the countryside in obtaining industrial products. As some products are unmarketable, the departments concerned simply compel commercial supply and marketing enterprises to take those products in tie-in sales. How can the small commercial supply and marketing departments operating on marginal profits in the countryside survive this kind of tie-in sale system?

Under the new situation of relaxing control to invigorate the economy, the old method of planned allocation has been discarded. How can we give full support to the role of multiple channels in doing a good job of distributing industrial products to the countryside? Quite a few localities have made useful trials which are good examples for all localities to follow. Some localities persist in giving full scope to the role of supply and marketing cooperatives as the main distribution channel in the countryside and in this endeavor they have achieved very good results. Some other localities have made large wholesale enterprises extend their service to the countryside. For instance, the wholesale points of industrial products, established by five large wholesale enterprises under the First Commercial Bureau of Tianjin municipality, have increased by more than 50 percent since the beginning of this year. Furthermore, they have set up business departments in urban-rural border areas for customers to make their choice, place orders, and take deliveries of commodities on the spot. This practice has resolved the difficulty faced by peasants over the years in having to travel to cities to take delivery of their purchases, and has promoted the distribution of industrial products to the countryside.

In addition to these methods, many localities have developed diverse forms of joint operations and marketing chains to promote distribution of industrial products to the countryside.

Many localities have even organized various types of trade fairs and order-placement meetings in the countryside and increased the frequency of industrial products delivery to remote districts.

/8309
CSO: 4007/70

MORE LAND ALLOCATED TO GRAIN OUTPUT

HK220328 Beijing CHINA DAILY in English 22 Nov 86 p 3

[By staff reporter Nie Lisheng]

[Text] China has expanded its grain sowing acreage this season by about 0.73 million hectares, or 2.6 percent over last year, in an effort to raise its grain production in 1987 above 405 million tons, a target it failed to reach this year.

The country's total sown acreage for all next year's summer crops--including rapeseed--increased by 0.113 million hectares to 42 million hectares, CHINA DAILY learned from a national conference on agriculture that closed in Beijing on Thursday.

But the relatively dry weather and the shortage of fertilizers are affecting the prospects for a bumper harvest next year. In some areas in North China, signs of drought have appeared following unusually warm weather, causing overgrowth of some wheat shoots that may lead to problems in the cold weather.

During the past sowing season, most of the country has been short of fertilizers and in some areas, farmers have even run out of stock. As the result of insufficient use of base fertilizers, crop shoots are not doing well in many areas.

The conference called on all local agricultural authorities to organize farmers for irrigating and fertilizing sprouting fields. The Ministry of Chemical Industry has decided to increase this year's fertilizer production by another 3 million tons to meet farmers' needs.

To ensure the steady growth of grain production, participants at the conference agreed that the country's total grain sown acreage should be kept stable at 110 million hectares a year. In 1985, grain output dropped to 380 million tons from the record level of 405 million tons in 1984 due to a sharp reduction in sown acreage. But this year, grain output pciked up to over 390 million tons thanks to expanded acreage.

By 1990, China plans to produce 425 to 450 million tons of grain. That means it has to increase grain output by 10 to 15 million tons annually in the next 4 years. Next year it is expected to make up for the goal it has missed this year--equalling 1984's record level of 405 million tons.

The participants agreed that increasing grain production will be a hard, long-term task for China's agriculture. Even if China raised annual grain output to 450 million tons by 1990, the figure per capita would drop by 16.5 kilograms to 378.5 kilograms from the 1984 level of 395 kilograms because of the population increase.

They held that future grain increases would mainly depend on farmers' enthusiasm for grain production.

But under the present strained financial conditions, it will be impossible for any big rises in state grain purchasing prices except for some slight increases for a few varieties of crops. This is not much of an incentive for grain growers, who are now earning much less than farmers engaged in rural commerce and industries.

Supplies of agricultural production materials such as fertilizers and diesel oil will be increased, but they will probably not be enough.

The participants urged that special efforts should be made to introduce high-yield varieties of crops in more areas.

/12232
CSO: 4020/47

RENMIN RIBAO NOTES INCREASE IN AQUATIC PRODUCTS

OW241122 Beijing XINHUA in English 0716 GMT 24 Nov 86

[Text] Beijing, November 24 (XINHUA)--China expects to produce eight million tons of aquatic products this year to become the world's third-largest producer, today's PEOPLE'S DAILY reported.

It has seen its output of aquatic products increase by nearly one million tons a year for the past few years. In 1984, the aquatic output was 6.19 million tons and in 1985, 7.05 million tons, the paper said.

The paper attributed the increase to the current policy of allowing prices for aquatic products to float according to market demand, the paper said.

Raising fish in fresh water has been given a boost over the past few years. In 1985, fish raisers got in 2.3 million tons of fish from 366 million hectares of freshwater fish farms, the paper said.

Scientists have also cultivated some high-yielding and fine-quality fish varieties while introducing foreign varieties and protecting offshore fish resources, the paper reported.

Moreover, the technique of storing aquatic products and fish processing have been improved, the paper said.

China's ocean fishing fleet has also contributed to the increase. Now China has 30 ocean-going fishing vessels.

The fleet brought back 3,000 tons of fish last year and this year they will produce more, the paper said.

/8309
CSO: 4020/50

MASSIVE VEGETABLE SHIPMENTS SUPPLY NORTHERN CITIES

HK250306 Beijing CHINA DAILY in English 25 Nov 86 p 3

[Text] Half a million tons of fresh vegetables are expected to arrive from South China over the next few months to ease shortages in Beijing, Tianjin and other parts of North China during the winter season.

This massive consignment of vegetables which will fill a total of 18,000 railway freight trucks, marks a 22 percent increase on last year's total supply of vegetables from south to north China, according to the Beijing-based COMMERCIAL NEWS.

This was disclosed at a recent conference held by the Ministry of Commerce and the Ministry of Railways in Zhangzhou, Fujian Province. A spokesman said the vegetables will be supplied to Beijing, Tianjin, Northeast and Northwest China by the southern provinces of Guangdong, Fujian, Yunnan and Sichuan provinces and also the Guangxi Zhuang Autonomous Region.

Guangdong Province--the major supplier--will send 190,000 tons of fresh vegetables to the north this winter. Beijing and Tianjin--the major recipients--will get a total of 100,000 tons of vegetables from the south, the conference was told.

The Ministry of Commerce started organizing the supply of vegetables from south to north two years ago, following the nationwide reforms which allow free trading in vegetables across China.

Since then, organized vegetable supply from south to north China has been increasing at an annual rate of 20 percent, COMMERCIAL NEWS said.

The large-scale supply of vegetables to the north has not only eased the winter shortage of fresh vegetables in northern cities but has also helped to raise the income of farm producers in southern provinces, where a large variety of vegetables are grown all year round.

By organizing a steady supply of winter vegetables to northern provinces, the south can give its farmers more work to do during their usually slack winter months, the report said.

In Beijing and Tianjin, the supply of vegetables during winter and early spring mainly depended on stored cabbages or expensive greenhouse produce, until recently. Local residents there were often urged to store several hundred kilograms of autumn cabbage in their own crowded houses or apartments to supply them during the winter.

The cabbage-selling and storing drive organized by Beijing City each winter had always been a hectic event, because tons of newly harvested cabbage had to be sold and stored before the freezing weather started.

This year, Beijing Municipality relaxed its winter vegetable-saving drive, to the delight of local consumers and vegetable dealers and thanks to the increasing supply from the south.

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CSO: 4020/50

EXPERT REVEALS ROSIN PRODUCTION LEADS WORLD

OW280343 Beijing XINHUA in English 0233 GMT 28 Nov 86

[Text] Nanning, November 28 (XINHUA)--China has become the world's leading rosin producer, with an annual output of more than 400,000 tons, a leading Chinese forestry expert announced today.

"China will increase its rosin exports as it has great potential in the forestry by-product industry," said He Jinke, China's first academician of the international academy of world science, at a national meeting on forestry by-product chemistry and utilization, now in session in the capital city of south China's Guangxi Zhuang Autonomous Region.

The forestry by-product industry is the processing and chemical separation of secretions from trees caused by wounds and insects. Rosin, raw lacquer, rubber and white wax fall into this category.

"Over 500 counties in China's 23 provinces have grown 200 kinds of trees, accounting for 80 percent of the world's resources in this field," said He Jinke, who is also a fellow of the research institute of chemical processing and forest utilization.

Masson's pine, the main species for producing rosin, covers 400,000 hectares of land in 15 southern China provinces.

China also grows 14 kinds of wallnut trees which are distributed in 19 provinces and regions. Some species from other countries, such as slash pine and black thorn, were also introduced to China.

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RESEARCH ON GRAIN, CASH CROP DEVELOPMENT REPORTED

Beijing ZHONGGUO NONGCUN FAZHAN WENTI [ISSUES IN RURAL DEVELOPMENT] in Chinese Nov 1985 pp 377-456

[Article by Chinese Academy of Agricultural Sciences Grain and Cash Crop Development Research Group: "Research on China's Grain and Cash Crop Development"]

[Text] Agriculture is the foundation of the national economy. In agricultural production grain and cash crops constitute primary production, and the rate at which they develop directly affects the state of agricultural development and even growth in the overall national economy. Initiating projections of grain and cash crop growth and studies of planting composition are crucial to quadrupling the gross value of national industrial and agricultural output by the end of this century.

The methods we have adopted to conduct this research are as follows: First, we proceed from a comprehensive viewpoint encompassing agriculture, forestry, animal husbandry, sidelines, and fishery: we combine grain and cash crop development with forestry, animal husbandry, sidelines, and fishery development and undertake a multipurpose, multilevel quantitative analysis. Second, we integrate inputs, outputs, and adopted administrative, economic, and technical measures to conduct feasibility studies. Third, we carry out a system synthesis study based on research and demonstration of 13 special topics, 28 crops, and the locations of China's 6 agricultural districts.

The contents of this report are divided into 6 parts: I. Projected Growth of Social Demand for Major Agricultural Products; II. Projected Growth in Output for Major Agricultural Products; III. Measures We Must Adopt To Achieve Projected Growth Targets; IV. A Regional Location Study; V. Discussion of a Few Problems; VI. Major Conclusions.

I. Projected Growth of Social Demand for Major Agricultural Products

The fundamental goal of socialist production is to satisfy continually society's ever-increasing needs. Right now food and clothing constitute 70 percent or more of urban and rural consumer living expenses in China. The vast majority of raw materials for food and clothing come from agricultural products. Marx once pointed out that "A society cannot halt consumption, and likewise it cannot halt production." (Footnote 1) (Karl Marx: "Das Kapital," Vol 1, p 619) It is precisely this cycle of unending production and consumption that lays the foundation for social and economic development.

The 12th Party Congress of the CPC suggested that by the end of this century the gross value of industrial and agricultural production will be quadruple its 1980 base level and the people will have a confortable standard of living. In realizing this macroeconomic goal we must particularly ensure that people are well-fed and well-clothed, and the foundation for this lies in developing agriculture and satisfying demands from all quarters for agricultural products.

A. Analysis of Relevant Factors Affecting the Quantity of Social Demand

1. Population and Population Structure

In Chinese economic and social development the population problem has consistently been one of the most crucial factors. From 1952 to 1982 China's total population rose from 574.82 million to 1,015.41 million people--an increase of 77 percent during that period. In the wake of the constant population increase the social demand for agricultural products has also grown tremendously. If we look at the daily consumption of grain, pork, and cotton alone, the quantities consumed in 1982 were 2.02 times, 2.30 times, and 2.48 times, respectively, what they were in 1952. If we compare the rates of average yearly increase, during that 30 years population grew at an average rate of 1.9 percent per year; grain, pork, and cotton output increased at an average annual rate of 2.6 percent, 3.8 percent, and 3.3 percent, respectively; and consumption of these products rose at an average annual rate of 2.4 percent, 2.8 percent, and 3.1 percent, respectively. The standard of living can only improve if production increases at a rate distinctly higher than the rate of population increase. If the production growth rate is not sufficiently higher than the population growth rate the increase in agricultural products for the most part can only be consumed by the new population increment and the standard of living cannot be improved. This is a fundamental restriction. The quantity of social demand in this article is calculated based on the assumption that total population will be held to base figures of 1.12 billion in the year 1990 and 1.2 billion in the year 2000. A look at the state of family planning implementation in the past few years shows that we have not attained the targeted 1.3 percent natural population increase demanded in the Sixth 5-Year Plan. For the nation as a whole, in 1981 the average birth rate was 2.091 percent and the death rate was 0.636 percent, for a 1.455 percent rate of natural increase. This exceeds the planned target by 0.155 percent. It looks as if it will still be a difficult task for us to realize the population control objective cited above.

In addition, if we look at population structure, according to data published in the Third Population Census the age composition of the Chinese population is young: over 40 percent of the population has already entered the child-bearing period and 42.5 percent of the population is about to enter the child-bearing period. Also according to statistics, in 1982 the social labor force in all sectors of the national economy amounted to 447.08 million people, or 44 percent of the total population. It is predicted that by the end of the century one-third of these laborers will be elderly and retired but nearly 300 million of them will still be working. At the same time, between 1965 and 1982 310.42 million people were born, and by the end of the century this portion of the populace will be in their prime labor years. Combining these two figures, we find that at the end of this century we will have 608.47 million people of working age, accounting for 50.7 percent of the 1.2 billion population. This trend of population growth and changing composition should be our basic starting point for forecasting the growth of social demands.

2. Income and Consumption Levels

In the past the Chinese economy was very backward and the people lived in dire poverty. In 1949, when the nation was liberated, the gross value of industrial and agricultural output was 46.6 billion yuan and the average per capita income was only 66 yuan. After 3 years of recovery, in 1952 the gross value of industrial and agricultural output reached 82.7 billion yuan and the average per capita income increased to 104 yuan. At this fairly low income level the people's daily consumption level continued to be very low. According to statistics, in 1952 people consumed 395 jin of grain (here and below, this refers to trade grain), 4.2 jin of edible vegetable oil, 11.8 jin of pork, and 17.1 chi of cotton cloth per capita nationwide.

After construction through several 5-year plans, and particularly due to the adoption of a series of advantageous production development policies after the 3d Plenum of the 11th Central Committee of the CPC, in 1982 the gross value of social production reached 989.4 billion yuan, constituting an available national income of 425.4 billion yuan. Excluding accumulation funds and public consumption, individual consumption totalled 322.1 billion yuan, or 297.5 yuan per capita. Concomitant individual incomes likewise rose. According to a sample survey, in 1982 the average per capita income in urban working families was 535.32 yuan, of which 500.28 yuan could be spent on living expenses, and the average per capita income in farming households was 270.11 yuan, of which 220.23 yuan could be spent on living expenses. Because income increased, the level of consumption also increased. In 1982 average per capita consumption nationwide had reached 451 jin of grain, 7.07 jin of edible vegetable oil, 23.5 jin of pork, and 30 chi of cloth.

It is worthwhile to point out that in the past few years the economic situation has developed rapidly. Between 1981 and 1983 the gross value of industrial and agricultural output increased 7.8 percent per year, exceeding the 7.2 percent yearly average growth rate scheduled for the 20 year period from 1981 to 2000. If this trend continues we not only can achieve our goal of quadrupling the gross value of industrial and agricultural output, we can even achieve it ahead of schedule.

If we look at historical circumstances, in general the gross value of industrial and agricultural output must account for 80 percent or more of the gross value of social production. Consequently, we can predict that by the end of this century China's gross value of social production will also have quadrupled. Furthermore, figuring that national income accounts for 43 percent of the gross value of social production, by 1990 China's average per capita national income will reach 652 yuan, and by the year 2000 it will reach

1,218 yuan. Based on the ratio of accumulation to consumption set by the state during each previous 5-year plan, and based on an analysis of the role this plays in national economic development and people's living arrangements, we predict that an accumulation to consumption ratio of 25:75 will be suitable for the years 1990 and 2000. Furthermore, based on current consumption funds, individual consumption will generally account for 88 percent. Calculating from this, by 1990 individual buying power (consumption fund) may reach 431 yuan, and by 2000 it may reach 804 yuan. According to Engels Law--that as income increases the proportion used to buy food will gradually decrease--if we project food and clothing consumption from the current level of 70 percent of all expenditures, then in 1990 people will be able to pay 302 yuan for food and clothing. In the year 2000, because the standard of living will have risen further, we predict that the composition of consumption will change and the portion of funds used to buy food and clothing will decline to 60 percent. This portion of buying power will amount to 482 yuan (see Table 1). Following new increases in buying power, the people will advance greater and greater demands for agricultural products and other consumer goods.

Table 1. Forecast of Per Capita Income in China in 1990 and 2000
(in billion yuan)

Item	Year	1990	2000
Gross value of social production		1,699.2	3,398.4
National income (figured at 43% of the gross value of social production)		730.7	1,461.3
Accumulation (figured at 25% of national income)		182.7	365.3
Consumption Fund	Total (75% of national income)	548.0	1,096.0
	Public consumption (12% of consumption fund)	65.8	131.5
	Individual consumption (88% of consumption fund)	482.2	964.5
Average per capita expenditures (in yuan)		431	804
Component amount usable for food and clothing (in yuan)		302	482

3. Changing Trends in Urban and Rural Consumption

Because history has given rise to major disparities between urban and rural areas in China, changes are now occuring to alter the gap in consumption levels. According to statistics, in 1952 nationwide consumption among urban and rural residents broke down as follows: city and town residents consumed 481 jin of grain (trade grain), 10.2 jin of vegetable oil, 17.8 jin of pork, and 40.19 chi of cotton cloth; village residents consumed 383 jin of grain (trade grain), 3.4 jin of vegetable oil, 11 jin of pork, and 11.51 chi of cotton cloth. In a comparison of the two, city and town residents clearly consumed more than village residents, as follows: urban areas consumed approximately 1.26 times as much grain, 3.00 times as much vegetable oil, 1.62 times as much pork, and 3.49 times as much cotton cloth as did rural areas.

However, in the wake of rural economic development, the urban/rural disparity is now gradually shrinking. According to 1982 rural sample survey results and statistics from 47 large, medium, and small cities, urban working families consumed an average that year of 361 jin of grain (unprocessed food grains), 11.5 jin of vegetable oil, 41.5 jin of pork, and 39.4 chi of cloth (including all kinds of woven goods) per person; rural residents consumed 520 jin of grain (unprocessed food grains), 6.86 jin of vegetable oil, 18.1 jin of pork, and 25.32 chi of cloth. In a comparison of the two, the consumption disparity between city and town residents and village residents has shrunk notably: urban areas consume approximately 0.69 times as much grain, 1.69 times as much vegetable oil, 2.31 times as much pork, and 1.56 times as much cloth as do rural areas. By comparison with 1952, excepting a slower increase in pork consumption in rural areas than in urban areas, consumption of these items has grown faster in rural areas. In particular, rural grain consumption has surpassed that of urban areas. Generally speaking, because of a series of policies we have adopted, in the past few years the standard of living has improved faster in rural than in urban areas. According to statistics, comparing 1983 with 1978 shows that there has been a 66.5 percent cost-of-living increase in workers' incomes, whereas there has been a 130 percent increase for peasants.

The gap between peasants and workers in their daily consumption levels is now shrinking. If we assign a value of 1 to peasant consumption expenditures, a comparison of worker and peasant expenditures shows a ratio of 1:2.68 in 1979 and 1:2.04 in 1983. Furthermore, from the perspective of the rate of increase in consumer goods turnover, rural areas far surpass urban areas. In 1983 China turned over 241.2 billion yuan worth of consumer goods, up 10.6 percent over 1982. Of this, 117.6 billion yuan was consumed in urban areas, for an increase of 7.9 percent over 1982, and 123.6 billion yuan was consumed in rural areas, for an increase of 13.2 percent over 1982. Right now, as far as food is concerned, peasants want to improve staple foods (in 1983 rural grain sales, the proportion of flour and rice rose to 81 percent from 78 percent the year before), increase nonstaple foods (in 1983 nonstaple foods sold in rural areas increased from 77 percent to 80 percent of retail food sales and, of this, meat, poultry, and egg sales increased 10 percent, sugar sales rose 13 percent, candy sales grew 12 percent, pastry sales increased 18 percent, and beer sales rose 42 percent), and sharply increase sales of high-quality foods and nutriments (some have grown 50 to 120 percent). As far as clothing is concerned, there is also a development away from primarily cotton textiles and toward diversity (in 1983 the quantity of cotton textiles sold in rural areas declined 21 percent, whereas synthetic and woolen textile sales increased 29 percent). In another area, following the restructuring of the rural economic system the composition of labor within agriculture is undergoing a profound change. According to predictions made by the departments concerned, due to the development of township and town enterprises and other diversified economic operations, by the end of this century 40 percent of the rural labor force will have switched to industry, commerce, and services, and will be participating in building small market towns. Although the 300 million peasants who leave the land but not the countryside will continue to live in rural areas, the character and intensity of their labor will gradually approach that of urban workers. Consequently, their demands for food and clothing will also tend toward urban consumption levels. The changes described above, which are just developing, will inevitably have a direct affect on the the future quantity and quality of demands for agricultural products.

4. The State of Trade on Domestic and International Markets

In the past few years, in the wake of the development of specialized, commercialized production, China's commodity ratio in farm and sideline products has improved tremendously. In 1983 state-run commerce and supply and marketing cooperatives purchased 97.5 billion yuan worth of agricultural and sideline products, up 14 percent over the previous year. If we eliminate the element of increased procurement prices, growth was still 12.8 percent. Of this, grain procurement totalled 193.47 billion jin, up 34.2 percent over the same period of the previous year, and there were 441 counties in which commodity grain sales exceeded 100 million jin. Cotton procurement measured 91.68 million dan, for an increase of 34.3 percent over the same period of 1982. Procurement of apples, citrus fruits, chrysanthemums, and Auricularia fungi increased 11 to 48.5 percent from 1982 to 1983, and procurement of fresh eggs, beef, and cattlehide rose 3.2 to 53.3 percent. From this it is obvious that the improvement in grain production in China has stimulated development in agricultural commodities production. Furthermore, from the perspective of the foreign trade situation, in 1952 there were 70 or 80 kinds of export commodities, and agricultural and sidelines products (here and below this includes processed goods) accounted for 82 percent of them. Later, in the wake of expanding domestic demand for agricultural products, as well as the gradually increasing quantity of industrial exports, the proportion of total exports composed of agricultural and sideline products gradually declined, receding to 39.5 percent by 1982. Due to an increase in agricultural imports the unfavorable trade balance in farm products reached 5,032,000,000 yuan. Of this, the trade deficit amounted to 2,395,000,000 yuan for foods and live animals primarily used for food, 61,000,000 yuan for beverages and tobacco, 2,521,000,000 yuan for unprocessed grain, and 55,000,000 yuan for animal and vegetable oils. Due to continuous large-scale increases in the production of grain, cotton and other staple agricultural goods, in the past 2 years this situation has changed. Now China has reduced grain imports and we export small quantities of vegetable oil and cotton. In light of increasing domestic yields of agricultural products, we must continue to develop exports. Right now world trade is characterized by rapid growth in grain, cotton, and food trade, while trade in the major cash crops is developing slowly. Moreover, market competition is intensifying over the major cash crops and, for a great many of them, supply and demand is unstable and prices soar and plummet by turns. In the midst of all this, trade in high-value goods is increasing, while exports of low-value goods are decreasing. The domestic sales and foreign trade situations described above will inevitably affect the demand for agricultural products.

B. Predictions of Demand in the Years 1990 and 2000

Based on an analysis of the above factors that affect the quantity of social demand, we adhere to the following principles in predicting demand: 1) We follow the predictions of the state-formulated Population Development Plan concerning the total population and the structural population changes that will be reached at particular times; 2) Based on production increases, income growth, and improvements in buying power, we correspondingly increase nutritional levels and clothing standards; 3) We observe a general narrowing trend between urban and rural consumption characteristics and disparities; 4) In commodity production and foreign trade development we account for changes in demand; 5) We account for developments in the food industry, the socialization of society, and improvements in communications, transportation, processing, and preservation.

1. Dietary Composition

In the wake of national economic growth, in the past few years dietary composition among the Chinese people has gradually improved. However, generally speaking, our nutritional level is still quite low. Based on an analysis of certain data extracted from representative surveys conducted by the Health Institute of the Chinese Academy of Medical Sciences and other units, each peasant assimilates an average of approximately 2,300 kcals per day and each urban resident assimilates an average of about 2,400 kcals per day. However, over 90 percent of this comes from plant foods, and the proportion of protein in the food is very low. In order to improve people's nutritional level we must improve the existing dietary composition. We must both consider the traditional emphasis on plant foods in the Chinese diet and suitably increase the proportion of animal foods to improve the health level. We have made some calculations based on this principle, and we propose the following three dietary composition plans (see Tables 2 and 3).

Table 2. Current and Forecasted Dietary Composition (in jin)

	1982 (current)			1990			2000		
Item	National average	Urban	Rural	Plan 1	Plan 2	Plan 3	Plan 1	Plan 2	Plan 3
Cereals	391	294	416	420	490	471	330	431	376
Beans	--	--	--	24	24	24	36	32	36
Fresh potatoes	--	--	--	72	60	72	72	60	72
Meats	24.3	41.8	19.7	36	30	36	60	45	60
Dairy products	2.7	9.0	1.0	20	19	22	60	40	60
Eggs	4.7	11.8	2.9	12	9	12	24	20	24
Fish	5.3	15.3	2.6	12	8	12	18	11	18
Vegetable oil	7.8	11.6	6.9	9	9	9	12	12	13
Sugar	3.6	8.1	2.4	12	12	12	12	12	13
Vegetables	276.0	318.0	264.0	279	250	279	240	250	240
Fruits	12.0	32.2	7.4	24	24	24	40	37	50

Explanation: 1) The 1982 (current) series is calculated based on data from workers households in 47 small, medium, and large cities nationwide, as published in the 1983 Statistical Yearbook, as well as on rural sample surveys conducted throughout China.

2) The 1982 figures for cereal consumption include beans, potatoes and other kinds of cereals, and the urban and national figures both refer to finished grain products.
3) Meats include pork, beef, mutton, rabbit, and poultry.

Table 3. Nutritional Composition of Current and Forecasted Diets

Item	1982 (current)	1990			2000		
		Plan 1	Plan 2	Plan 3	Plan 1	Plan 2	Plan 3
Heat (in kcals)	2,251	2,413	2,608	2,612	2,400	2,616	2,602
% derived from plant foods	92.0	87.6	90.6	88.6	78.3	85.1	79.9
% derived from animal foods	8.0	12.4	9.4	11.4	21.7	14.9	20.1
Protein (in grams)	55.3	68.1	72.2	73.2	73.2	76.2	77.7
% derived from plant foods	90.5	84.9	88.9	85.8	74.9	82.0	76.3
% derived from animal foods	9.5	15.1	11.1	14.2	25.1	18.0	23.7

Plan 1: The grain ration will be fairly low and the quantity of animal foods will be rather high (in 1990 the average per capita grain ration will be 1.26 jin per day or 458.4 jin per year, and in 2000 it will be 1.04 jin per day or 380.4 jin per year; in 1990 the average per capita meat consumption will be 0.10 jin per day or 36 jin per year, and in 2000 it will be 0.16 jin per day or 60 jin per year). In the years 1990 and 2000 the average per capita caloric value will total 2,413 kcals and 2,400 kcals, respectively, and the proportion derived from animal foods will measure 12.4 percent and 21.7 percent, respectively. The diet will contain 68.1 grams of protein in 1990 and 73.2 grams in 2000, while the proportions derived from animal foods will measure 15.1 percent and 25.1 percent, respectively.

Plan 2: The grain ration will be fairly high and the quantity of animal foods will be rather low (in 1990 the average per capita grain ration will be 1.44 jin per day or 526 jin per year, and in 2000 it will be 1.30 jin per day or 475 jin per year; in 1990 the average per capita meat consumption will be 0.08 jin per day or 30 jin per year, and in 2000 it will be 0.12 jin per day or 45 jin per year). In the years 1990 and 2000 the average per capita caloric value will total 2,608 kcals and 2,616 kcals, respectively, and the proportion derived from animal foods will measure 9.4 percent and 14.9 percent, respectively. The diet will contain 72.2 grams of protein in 1990 and 76.2 grams in 2000, while the proportions derived from animal foods will measure 11.1 percent and 18.0 percent, respectively.

Plan 3: The grain ration will be moderate and the quantity of animal foods will be rather high (in 1990 the average per capita grain ration will be 1.40 jin per day or 509.4 jin per year, and in 2000 it will be 1.70 jin per day or 426.4 jin per year; in 1990 the average per capita meat consumption will be 0.10 jin per day or 36 jin per year, and in 2000 it will be 0.16 jin per day or 60 jin per year). In the years 1990 and 2000 the average per capita caloric value will total 2,612 kcals and 2,602 kcals, respectively, and the proportion derived from animal foods will measure 11.4 percent and 20.1 percent, respectively. The diet will contain 73.2 grams of protein in 1990 and 77.7 grams in 2000, while the proportions derived from animal foods will measure 14.2 percent and 23.7 percent, respectively.

As to the nutritional level offered by these dietary compositions, in the first plan the average per capita caloric value will be 2,400 kcals or a little more, and in the second and third plans it will be 2,600 kcals or a little more. Between 1990 and 2000 the caloric values will remain essentially unchanged but the protein content will rise in each of the diets: in 1990 it will measure 68.1 to 73.2 grams, and in 2000 it will measure 73.2 to 77.7 grams. The common ground in the three plans is that to varying degrees they all increase the proportion of animal foods in the diet. Consequently, the proportions of caloric value and protein derived from plant foods gradually decline and the proportions derived from animal foods gradually climb. In this way nutritional levels are improved in all three plans.

2. Garment Composition

We predict that we will build upon our current consumption level of 22 chi of assorted cloth per capita per year and raise it to about 32 chi per capita per year. Furthermore, there will be suitable increases in consumption of synthetic blends, woolens, silks and satins. By the year 2000 people will be consuming 38 chi of assorted cloth per capita per year (of which synthetic blends will constitute 60 percent). If we add in the demand for other cotton woven goods, the total amounts to 4.8 jin of raw cotton, and there will also be a need for 2.0 chi of wool cloth, 0.26 jin of wool yarn, and 5.0 chi of silks and satins (see Table 4).

Table 4. Garment Composition

		1990		2000	
Type	Unit	Quantity needed	Cotton equivalent (in jin)	Quantity needed	Cotton equivalent (in jin)
Cotton garments	each	2.5*	1.80	2.10	1.50
Synthetic garments	each	2.00**	0.54	3.30	0.92
Interlock cotton shirts and pants	each	0.50	0.07	1.00	0.14
Sweatsuits	each	0.10	0.15	0.10	0.15
Sleeveless undershirts	each	1.00	0.24	1.50	0.36
Towels	each	1.50	0.24	2.00	0.32
Socks	pair	1.00	0.03	1.00	0.03
Sheets	each	0.30	0.53	0.50	0.88
Cotton wadding	jin	0.50	0.50	0.50	0.50
Wool yarn	jin	0.19		0.26	
Wool fabric	chi	0.75		2.00	
Silk and satin	chi	2.00		5.00	
Total			4.10		4.80

Notes: 1) Each garment requires about 7 chi of cloth.
2) Synthetic cloth containing 40% cotton requires 0.04 jin of cotton for each chi of cloth.
3) *Amounts to 18 chi of cloth.
**Amounts to 13.5 chi of cloth.

3. Other Social Needs

a. Grain

In addition to food we use grain in the following ways: 1) Seed grain: Considering the possibility that future improvements in seed quality and the adoption of precision seed drilling will conserve on the quantity of seed we use, we calculate that, at 23 to 25 jin per mu, we will need 43.5 billion jin in 1990 and 40 billion jin in 2000. 2) Feed grain: Figured at a grain to meat ratio of 3.3:1 in 1990 and 3.2:1 in 2000 (excluding bran, rice dregs cakes, and so forth), in 1990 we will need 223.8 billion jin (for Plan 1), 189.7 billion jin (for Plan 2), or 224.3 billion jin (for Plan 3); and in the year 2000 we will need 290.8 billion jin (for Plan 2) or 369.3 billion jin (for Plan 1 or 3). 3) Industrial grain, including grain for brewing, pharmacy, spinning and weaving, and other industrial uses: In 1990 we will need 50.0 billion jin (calculated at about 6 percent of total grain output), and in the year 2000 we will need 100.0 billion jin (calculated at about 10 percent of total grain output). 4) New increments in reserves: Calculated based on the quantity of grain needed in a year for the new population increment, we will need 600 to 700 million jin in 1900 and 800 million to 1.0 billion jin in 2000. 5) Spoilage: if we analogize from the current spoilage rate of about 3 percent, in 1990 we will need 25.0 billion jin and in 2000 we will need 28.0 billion jin. A total of the above 5 items shows that in 1990 we will need non-ration grain amounting to approximately 342.9 billion jin (for Plan 1), 308.9 billion jin (for Plan 2), or 343.5 billion jin (for Plan 3); and in 2000 we will need approximately 459.8 billion jin (for Plan 2) or 538.1 billion jin (for Plan 1 or 3) (see Table 5).

Table 5. Quantities of Grain for Non-ration Uses (in billion jin)

	1990			2000		
Use	Plan 1	Plan 2	Plan 3	Plan 1	Plan 2	Plan 3
Seed	43.5	43.5	43.5	40.0	40.0	40.0
Feed	223.8	189.7	224.3	369.3	290.8	369.3
Industrial material	50.0	50.0	50.0	100.0	100.0	100.0
New reserves increments	0.6	0.7	0.7	0.8	1.0	0.9
Spoilage	25.0	25.0	25.0	28.0	28.0	28.0
Total	342.9	348.9	303.5	538.1	459.8	538.2

b. Cotton

Cotton for non-garment uses includes cotton not used for spinning and weaving clothes or for cotton wadding: cotton owned by peasants for personal use, commodity cotton for foreign trade exports, new increments in reserves, and spoilage. A total of these items shows we will need 39.77 million dan of non-garment cotton in 1990, of which 16 million dan will be exported, and we will need 45.65 million dan in 2000, of which 20 million dan will be exported (see Table 6).

Table 6. Quantities of Cotton for Non-garment Uses (in million dan)

Use	1990	2000
Non-textile industrial uses	2.75	3.28
Peasant-owned cotton	3.75	3.75
Foreign trade exports	16.00	20.00
New increments in reserves	15.98	17.07
Spoilage	1.29	1.55
Total	39.77	45.65

c. Other Major Cash Crops

Taking into consideration the demand brought about by improvements in the standard of living, industrial development, foreign trade and other factors by the years 1990 and 2000, we can calculate the demand for various items from current base figures: Oil crops--33.6 billion jin (1990) and 45.0 or 48.8 billion jin (2000); fiber crops--26.9 million dan (1990) and 33.2 million dan (2000); sugar crops--112.0 billion jin (1990) and 110.8 or 120.0 billion jin (2000); tobacco--27.97 million dan (1990) and 35.50 to 53.75 billion dan (2000); tea--9.30 to 11.54 million dan (1990) and 17.00 to 22.80 million dan (2000); fruit--32.5 billion jin (1990) and 54.0 to 72.0 billion jin (2000); vegetables--280.0 to 312.5 billion jin (1990) and 288.0 to 300.0 billion jin (2000) (see Table 7).

Table 7. Total Demand (grain, oil crops, sugar crops, vegetables and fruit are measured in billion jin; cotton, fiber crops, tobacco, and tea are measured in million dan)

1990

	Plan 1		Plan 2		Plan 3	
Item	Total	For domestic consumption	Total	For domestic consumption	Total	For domestic consumption
Grain	856.31	513.41	898.02	589.12	914.03	570.53
Cotton	85.69	49.67	85.69	49.67	85.69	49.67
Oil crops	34.4	33.6	34.4	33.6	34.4	33.6
Fiber crops	26.90	--	26.90	--	26.90	--
Sugar crops	112.0	112.0	112.0	112.0	112.0	112.0
Tobacco	27.97	22.32	27.97	22.32	27.97	22.32
Tea	9.30	6.00	11.54	7.64	9.96	5.96
Fruit	32.5	32.5	32.5	32.5	32.5	32.5
Vegetables	312.5	312.5	280.0	280.0	312.5	312.5

2000

	Plan 1		Plan 2		Plan 3	
Item	Total	For domestic consumption	Total	For domestic consumption	Total	For domestic consumption
Grain	994.58	456.48	1,029.80	570.00	1,049.88	511.68
Cotton	103.25	61.35	103.25	61.35	103.25	61.35
Oil crops	48.8	45.0	48.8	45.0	52.6	48.8
Fiber crops	33.20	--	33.20	--	33.20	--
Sugar crops	110.8	110.8	110.8	110.8	120.0	120.0
Tobacco	39.28	33.64	35.50	29.70	53.75	48.10
Tea	17.00	12.00	22.80	16.80	18.07	10.83
Fruit	57.6	57.6	54.0	54.0	72.0	72.0
Vegetables	288.0	288.0	300.0	300.0	288.0	288.0

C. Total Predicted Demand

1. Based on the Above Individual Estimates of Demand We Propose Three Scenarios for Total Demand

In the three scenarios for total demand, by 1990 we will need 856.31 to 914.93 billion jin of grain, or 764 to 816 jin per capita, and 60.0 to 62.4 percent of this will be used for food; by the year 2000 we will need 994.58 to 1,049.88 billion jin of grain, or 829 to 875 jin per capita, and 45.9 to 48.7 percent of this will be used for food. By 1990 we will need 85.69 million dan of cotton, or 7.7 jin per capita, and 53.6 percent of this will be used for clothing; by the year 2000 we will need 103.25 million dan of cotton, or 8.6 jin per capita, and 5.8 percent [figure as published] of this will be used for clothing. From this it is obvious that direct consumption of grain, cotton, and other daily necessities holds the dominant place in total demand. The above three plans are all calculated based on 1.12 billion people in 1990 and

1.2 billion people in 2000. If population increase exceeds the plan, each individual demand will also increase correspondingly. If population increases 5 percent by 2000, to 1.26 billion, the grain ration alone will have to rise approximately 23.34 billion jin; if population increases 10 percent, to 1.32 billion, the grain ration will have to rise 46.68 billion jin.

2. Total Social Demand Extrapolated as a Function of Consumption

The figuring behind each of the three plans is as follows: Plan A takes survey data on family livelihood as its basis and distinguishes urban and rural subpatterns; Plan B takes increases in national income as its basis; Plan C is based on time series patterns and expert opinion. If we synthesize the total demand produced using Plans A, B, and C, by 1990 we will need 826.7 billion jin of grain, 94.06 million dan of cotton, 298.80 million dan of oil crops, 826.46 dan of sugar crops, 27.30 million dan of jute and ambari hemp, and 21.37 million dan of flue-cured tobacco; in the year 2000 we will need 1,009.6 billion jin of grain, 112.50 million dan of cotton, 490.33 million jin of oil crops, 1,409.75 million dan of sugar crops, 32.42 million dan of jute and ambari hemp, and 24.70 million dan of flue-cured tobacco. If we compare total demand extrapolated in this manner with directly calculated total demand, the two are essentially similar.

II. Projected Growth in Output for Major Agricultural Products

The basic principle of socialist production is planned, proportional development. Forecasting production growth for the major agricultural products and providing feasible scientific demonstrations are the major foundation for formulating a program for long-term national economic development.

A. The History and Current State of Grain and Cash Crop Production

In 1949, when the PRC was established, agricultural production was at a very low level: gross grain output totalled only 226.36 billion jin, cotton yielded 8.88 million dan, and oil crop production measured 51.27 million dan. After 3 years of recovery, in 1952 the gross grain output totalled 327.8 billion jin, cotton yielded 26.08 million dan, oil crop production measured 83.86 million dan, and we produced 6.77 billion jin of meat. After 26 years of construction, in 1978 gross grain output reached 609.54 billion jin, cotton yielded 43.34 million dan, and oil crop production measured 104.36 million dan. During this period, although some progress was made in agricultural production, the steps in that progress were not big enough. If we compare 1978 with 1952, grain increased 85.9 percent, for an average annual growth rate of 3.3 percent; cotton rose 66.2 percent, for an average annual growth rate of 2.5 percent; oil crops expanded 24.4 percent, for an average annual growth rate of 0.9 percent, and meat rose 152.9 percent for an average annual growth rate of 5.9 percent.

In the past 5 years agricultural production has developed rather rapidly. In 1983 various crop yields set historic record highs: gross grain output totalled 774.56 billion jin, cotton yielded 92.74 million dan, and oil crop production measured 210 million dan. If we compare 1983 with 1978, grain increased 27.3 percent, for an average annual growth rate of 5.5 percent, cotton rose 114 percent, for an average annual growth rate of 22.8 percent, and oil crops expanded 102.2 percent, for an average annual growth rate of 20.4 percent.

In analyzing the features of grain and cash crop production development in the past few years, we should include the following points:

1. We have primarily devoted ourselves to improving unit yields. Because China has a large population and little arable land, even reserve resources of arable land are limited. As population grows constantly larger, per capita land holdings will gradually decline. Consequently, if we are to improve gross yields for various crops we must try hard to improve productivity per unit of land area: this is the most important channel for our efforts. At the same time, we must also actively develop and utilize mountain lands, grasslands, and waters. Right now, because our economic resources are limited, it is difficult to develop and utilize our extensive hilly and mountainous lands, grasslands, and waters on a large scale. Nevertheless, from a long-term perspective, these areas still have major development potential.

2. Grain production and economic diversity must help each other forward. For a long time past, because the amount of grain per capita in China was always fairly short, we concentrated exclusively on grain. Not only did grain production grow slowly, but there was little room to maneuver in cash-crop production. In the past few years we have carried out a policy to "actively develop the diversified economy without any relaxation in grain production," and we have adopted a series of correct economic policies. Now we already have enough grain, and cash crops have also been developed comprehensively. After people's subsistence problems were essentially resolved a demand to improve food quality inevitably arose, calling for us to convert surplus grain by developing animal foods and other processed foods. This accelerated the growth of the diversified economy and advanced a new demand to restructure the rural economy.

3. For grain and cash crops we must adopt a production channel featuring comprehensive development and multi-stage utilization. In the past we engaged in one-crop production, and production options were narrow and limited, so the rural economy could not expand. In the past few years, since the output-related system of contracted responsibility was put into effect, we have implemented a production channel featuring comprehensive development and multi-stage utilization among many sectors, many avenues, and many links, built on a base of specialized households, specialized villages, and economic associations. This is the only way we can ensure that limited agricultural resources are fully utilized so that they increase in value many times over. It is also the only way we can make sure that our abundant labor resources are divided and constituted in an equitable fashion, that we open up all avenues for talented people, and that we build a flourishing rural economy.

4. To improve output we must possess suitable material technological equipment. Various large-scale production experiences and typical surveys indicate that if we want to improve yield levels for grain and cash crops, we

must have a corresponding level of material and energy as a foundation. Moreover, we must possess corresponding production technology and management techniques and improve our results from material technological equipment. This will guarantee normal operation in the overall production system and thus bring about a corresponding increase in productive forces.

B. An Analysis of Grain and Cash Crop Development Trends

1. The Trend of Development in Grain Crop Output Per Unit of Area

a. The Rate of Increase in Unit Yields

A look at the historical situation shows that in the 34 years from 1949 to 1983 the unit grain yield rose an average 9.3 jin per year. Within this, it rose an average 13.0 jin per year in the 3 years from 1949 to 1952, 6.2 jin per year in the 26 years from 1953 to 1978 (except for 10 years in which production fluctuated, in the other 16 years the average increase measured 10.1 jin per year), and 23.2 jin per year in the 5 years from 1978 to 1983 (see Table 8). From this it is obvious that it is possible hereafter to accomplish an average annual increase of 10 jin per mu, that is to move forward at a yearly rate of 2.4 percent. In this way it is possible for us to reach an average per-mu grain yield of approximately 600 jin nationwide before the year 2000.

Table 8. Increases in Unit Grain Yield Over the Years

Year	Unit yield (in jin)	Annual increase in jin within interval	
1949	137	1949-1952	13.0
1952	176	1953-1978	6.2
1978	337	1978-1983	23.2
1983	453	1949-1983	9.3

b. Conditions and Growth Rates on High-yield Land

In the past few years, calculated based on cultivated land area, the average per-mu grain yield in southern China in Jiangsu, Zhejiang, Shanghai, and Hunan has measured 580 to 660 jin. It generally took 13 to 18 years for these regions to rise to this level from around 365 jin per mu (which was the average national per-mu grain yield in 1980). If we calculate based on the 1982 average national per-mu grain yield of 416 jin, it took about 12 years for these regions to build up to the current level. In 1982 the basic production conditions in these four regions were as follows: figuring based on sown area, farmers applied 66 to 108 jin per mu of standard fertilizer (176 jin in Shanghai), the effective irrigated area reached 70 to 80 percent (of which 70 to 80 percent was paddy land), agricultural machine power measured 18.7 to 31.3 horsepower per 100 mu of arable land (58 horsepower in Shanghai), farmers reared 0.29 to 0.51 head of pigs per mu, and green manure crops accounted for 6.3 to 18.5 percent of the sown area. In the north, in Hebai, Shandong, Henan, and Liaoning, there are 20 or so high-yield counties. Within the space of 10 years the per-mu grain yield in these areas rose from about 360 jin to 570 jin or more. Their basic conditions were as follows: farmers applied 100 or more jin per mu of fertilizer, the effective irrigated area reached 45 to 50 percent, agricultural machine power measured about 20 horsepower per 100 mu of arable land, and farmers reared 0.43 head of pigs per mu. If basic agricultural production conditions nationwide can all be brought to the level enjoyed in the above provinces, cities, and counties, there is a possibility that we may achieve a yield level of 570 to 660 jin per mu.

c. Production Capacities in Different Types of Regions

Based on statistical data on yields in the 2,137 counties in China from 1978 to 1980, we classified the data to calculate pooled results: On 508 million mu of sown area in high-yield regions the average per-mu yield reached 595 jin; on 487 million mu of sown area in moderate-yield regions the average per-mu yield was 421 jin; on 751 million mu of sown area in low-yield regions the average per-mu yield was 166 jin. Calculating from base figures of average output between 1978 and 1980, if we raise the average output level in low-yield regions to the level attained in moderate-yield regions, raise the output of moderate-yield regions to the level of high-yield regions, and further raise the output in high-yield regions to an average of 760 jin per mu, by the year 2000 the national average per-mu yield will reach 567 jin, up 7.9 to 12.1 jin per mu from the average yield between 1978 and 1980. This is essentially identical with results obtained through other avenues of reckoning.

Furthermore, from the perspective of the high-yield capacity we have already attained, several high-yield counties have appeared in the past few years in all different types of regions. Figured based on sown area, the average per-mu yield in these areas is around 800 jin, more than 100 percent higher than the 1978 to 1982 national average of 373 jin per mu. Right now these high-yield counties do not account for a large proportion of counties, but they reflect the actual production capacity that can be attained in different types of areas. If, by the year 2000, the average national per-mu yield increases to about 600 jin, it will only be 75 percent of the current average yield level in these high-yield counties.

d. The Relationship of Production Conditions and Technological Level to Unit Yield Level

Based on experimental research data on various crop yields, we plotted trends of change for each technological factor affecting output and then comprehensively analyzed and calculated the effectiveness of each factor in increasing yields. Among these are the following: each jin of fertilizer increases the grain yield 1 jin; after dry fields are converted to wet fields, each mu of irrigated land produces 37 to 100 percent more than dry land; switching to improved varieties increases the per-mu yield 10 percent; draining flooded land and transforming low-yield fields increases per-mu yields 50 percent; controlling blight and pest damage decreases output losses 3 percent; adopting greenhouse cultivation increases per-mu yields 10 to 20 percent; integrated cultivation techniques increase yields about 15 percent; and the benefits produced by agricultural mechanization through various measures were not separately calculated. Based on the effectiveness of the above measures in increaseing yields, we conducted a comprehensive analysis of the degree of development it is possible to reach, and calculated that it is possible for grain output to increase from the current 365 jin per mu to around 610 jin per mu.

2. The Trend of Development in Cash Crop Output Per Unit of Area

In the period from 1950 to 1983 the per-mu yields of cotton, oil crops, sugar crops, fiber crops, and tobacco increased by average annual values of 2.4 jin, 2.2 jin, 33.6 jin, 9.0 jin, and 4.4 jin, respectively. During this time, the unit yield levels of oil and sugar crops fluctuated for 20-plus years and those of cotton, fiber crops, and tobacco fluctuated for 10-plus years. From 1978 to 1983 there were rapid increases in each of these crops: cotton, oil crops, sugar crops, fiber crops, and tobacco increased by average annual values of 8.6 jin, 11.2 jin, 243 jin, 37.6 jin, and 7.8 jin, respectively. They far surpassed the average rate of increase for the previous 33 years.

Right now there are some provinces and cities, such as Zhejiang, Shanghai, Jiangsu, Hunan, Guangdong, Fujian, and so forth, where the per-mu yields of cotton, oil crops, sugar crops, fiber crops, and tobacco have risen from 70 jin, 130 jin, 4,000 jin, 290 jin, and 240 jin, respectively, to 100 to 120 jin for cotton, 250 jin for oil crops, 6,000 jin for sugar, 650 jin for fiber crops, and 350 jin for tobacco. Ten or more years were spent in arriving at these yield levels. Particularly for cotton, in Jiangsu, Shanghai, and Zhejiang, and recently in some regions of Hebei and Shandong, the per-mu yield has been raised from 100 jin to 120 jin in just a few years, or even in a single year. Some high-yield counties with even higher production levels have also emerged in China, recording per-mu outputs of 150-plus jin of cotton, 300-plus jin of rape, 10,000-plus jin of sugarcane, 5,000-plus jin of beets, and 350-plus jin of flue-cured tobacco. This demonstrates that significant production potential remains for these major cash crops. Synthesizing and analyzing the large quantity of representative data, if we continue to develop at the average rate of increase recorded for 1950 to 1983, by the end of this century it is possible that average per-mu outputs of cotton, oil crops, sugar crops, fiber crops, and tobacco will reach 120 jin, 250 jin, 6,000 jin, 450 jin, and 350 jin, respectively.

3. The Trend of Development in Arable Land Area and Sown Land Area

According to figures published by the State Statistical Bureau, in 1949 there were 1.47 billion mu of arable land area in China. Due to wasteland reclamation during the 1950's, by 1957 arable land area had climbed to 1.67 billion mu. Thereafter the quantity decreased gradually until it dropped again to 1.47 billion mu in 1983. In the 26 years from 1959 to 1983 arable land declined an average of approximately 7.60 million mu per year. Data supplied from various areas indicates that in the future we must adopt strict measures to control the occupation of arable land for other uses and make sure that no more than an average 5 million mu per year are so occupied. In this way, by the end of the century our actual arable land area will also decline 100 million or so. We must reclaim 100 million mu of wasteland suitable for farming in order to achieve a balance between increases and declines: this is the only way we can essentially preserve the existing arable land area. It will be quite difficult to achieve this aim. In view of this situation, there are two possible ways of estimating the trend of expansion in sown land area. By one method the sown area will decrease somewhat. While the area of arable land gradually declines 100 million mu, we will restore the multiple crop index to 155 percent of what it was in 1977. Thus, the actual sown area will drop 40 million mu, to 2.12 billion mu, and the portion of this sown in grain crops will decline to 1.64 billion mu, down approximately 100 million mu from the current level. By contrast, the area sown in cash crops and other crops will increase more than 30 million mu. By the second method of estimation, the sown land area will increase somewhat and the portion sown in grain crops will remain basically stable. We will strictly control the occupation of arable land for other uses, and at the same time we will restore the multiple crop index to 155 percent of what it was in 1977. Thus, the sown area may reach 2.3 billion mu, and the portion of this sown in grain crops will stabilize at the 1983 level of 1.71 billion mu. The area sown in cash crops and other crops will be further expanded by 100 million mu. However, we must still take into consideration that slope land of 25 degrees and above should be withdrawn from cultivation. It will not be easy to achieve the above arrangements.

C. Development Forecast for Various Gross Crop Yields in 1990 and 2000

Agricultural production is limited by natural and economic laws. To come up with a long-term development forecast we must possess a large quantity of data and have complete scientific demonstrations. Right now our foundation in this area is extremely weak. We have worked out a development forecast for various gross crop yields based only on an analysis of existing data and development trends for grain and cash crop unit yields and sown land areas. We have also made the following series of factors the basis for considering problems: 1) We must make the fullest and most rational use of existing arable land and improve various crop yields per unit of area. 2) Our national resources and potential are limited and we cannot invest a large quantity of money within the short term. In the future we must open up and utilize mountain land, grasslands, and water areas on a large scale. 3) Our standard of living is constantly improving and the demand for social development is constantly increasing. We must be basically self-sufficient in grain and other agricultural products, and we must do all we can to expand the quantity of agricultural exports. 4) We must make a complete appraisal of the role that specialized households, economic associations, and the production responsibility system based on household contracting will play in promoting the development of agricultural production. 5) We must rely on scientific and technological progress and extend applications of the benefits and potentialities that accrue after scientific and technical achievements are transformed into productive forces.

1. Output Levels for Various Crops

Based on developmental research on 28 crops, we gone one step further and conducted a comprehensive equilibrium analysis and demonstration on assorted crop yields and growing areas and induced the gross yield development level that may be reached by the years 1990 and 2000.

a. Grain Crops

We have proposed two plans for 1990: In Plan 1 the area sown in grain crops will stabilize at the 1983 level of 1.71 billion mu, the soybean area will be suitably restored, the average per-mu grain yield will reach 521 jin, and gross output will total 890.9 billion jin. In Plan 2 the pace of reduction seen from 1980 to 1983 will continue to develop, the area sown in grain crops will drop to 1.68 billion mu; the potato, sorghum, and variety grain crop areas will be suitably reduced; the average per-mu grain yield will rise to 523 jin; and gross output will total 879.3 billion jin. This plan will be regulated primarily by reducing crop areas and improving unit yields (see Table 9).

We have proposed three plans for 2000. In Plan 1 the area sown in grain crops will stabilize at the 1983 level of 1.71 billion mu, the average per-mu yield will reach 577 jin (up 54 to 56 jin over 1990), and gross output will total 985.9 billion jin. In Plan 2 the sown grain area will also be maintained at 1.71 billion mu, the average per-mu yield will rise to 616 jin (up 93 to 95 jin over 1990), and gross output will total 1,053.7 billion jin. In Plan 3, the sown grain area will be reduced to 1.64 billion mu (down 110 million mu from 1980), the average per-mu yield will rise to 618 jin (up 95 to 97 jin over 1990), and gross output will total 1,013.7 billion jin. From an overall perspective, Plans 1 and 2 both call for the area sown in grain crops to stabilize at the 1983 level of 1.71 billion mu. This requires us to adopt strict controls on arable land and bring the multiple crop index up to 155

Table 9. Grain Crop Development Plans (in billion mu, jin, and billion jin)

	Present situation					
	Average 1978-1982			1983		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Total	1.756	373	654.4	1.711	453	774.6
Rice	0.506	574	290.3	0.497	680	337.8
Wheat	0.432	278	119.9	0.436	374	162.8
Corn	0.295	404	119.2	0.282	483	136.4
Potatoes	0.156	364	56.6	0.141	415	58.5
Millet	0.064	201	12.2	0.061	246	15.1
Sorghum	0.044	326	14.4	0.041	411	16.7
Soybeans	0.114	145	16.5	0.114	172	19.5
Variety Grains	0.149	189	28.3	0.139	200	27.8

	1990					
	Plan 1			Plan 2		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Total	1.710	521	890.9	1.680	523	879.3
Rice	0.500	750	375.0	0.500	750	375.0
Wheat	0.420	430	180.6	0.400	430	172.0
Corn	0.300	580	174.0	0.300	580	174.0
Potatoes	0.120	500	60.0	0.120	500	60.0

Millet	0.060	300	18.0	0.050	300	15.0
Sorghum	0.040	500	20.0	0.040	500	20.0
Soybeans	0.140	220	30.8	0.140	220	30.8
Variety Grains	0.130	250	32.5	0.130	250	32.5

	2000								
	Plan 1			Plan 2			Plan 3		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Total	1.710	577	985.9	1.710	616	1,053.7	1.640	618	1,013.7
Rice	0.500	800	400.0	0.500	850	425.0	0.480	850	408.0
Wheat	0.420	480	201.6	0.420	500	210.0	0.400	500	200.0
Corn	0.300	650	195.0	0.300	700	210.0	0.300	700	210.0
Potatoes	0.120	600	72.0	0.120	670	80.4	0.110	670	73.7
Millet	0.050	300	15.0	0.050	350	17.5	0.050	350	17.5
Sorghum	0.040	550	22.0	0.040	600	24.0	0.040	600	24.0
Soybeans	0.150	275	41.3	0.150	275	41.3	0.140	275	38.5
Variety Grains	0.130	300	39.0	0.130	350	45.5	0.120	350	42.0

percent of what it was in 1977; only then can we achieve our goal. In Plan 3, after the sown land area is reduced there will be a rather high demand on unit yield that will depend for success on significant material inputs and scientific and technological progress. Although these three plans all present some degree of difficulty, through strenuous efforts they are attainable.

b. Cash Crops

We have proposed two plans for 1990, calling for the area sown in cash crops to expand to 324 million or 298 million mu, respectively. The major increases will be in oil crops, peanuts, sunflowers, and beets.

The cotton growing area will be held to either 85 million or 80 million mu, down 6.16 million or 11.14 million mu from 1983. The average per-mu yield will be 110 jin and gross output will measure either 93.50 million or 88.00 million dan. If we improve quality and open up new markets there will still be the potential to increase production.

The oil crop growing area will be expanded to either 181.00 million or 161.00 million mu. Of this, rape will be expanded 25.00 million or 15.00 million mu over 1983, the average per-mu crop yield will be raised to 180 jin or 200 jin, and gross output will measure 144.00 million or 140.00 million dan, respectively.

The sugar crop growing area will be expanded to either 23.00 million or 19.30 million mu. The beet growing area in particular will be increased, by 4.84 million or 1.84 million mu, respectively, over 1983, the average per-mu yield will rise to either 2,500 jin or 3,000 jin, and gross output will measure 325.00 million or 300.00 million dan in Plans 1 and 2 respectively.

In fiber crops, the areas sown in jute and ambari hemp were reduced significantly in 1983 and gross output dropped somewhat. The sown area will be restored in 1990 and the average per-mu yield will improve slightly, so gross output will rise to 30.50 million under Plan 1 or 24.40 million dan under Plan 2.

In tobacco, we will essentially preserve the current sown area of 8 million-plus mu. The average per-mu yield will reach 300 jin and gross output will measure either 27.60 million or 24.00 million mu.

We have proposed three plans for the year 2000. In Plan 1 the area sown in cash crops will be expanded to 351 million mu, and in particular oil crops, beets, and sugarcane will continue increasing. In Plan 2 the area sown will be 322 million mu, nearly the same as called for in Plan 1 for 1990. In Plan 3 the area sown will be reduced to 279 million mu, essentially maintaining the 1983 level. The components of these plans are as follows:

The cotton growing area will be maintained at the 1990 level and the average per-mu yield will rise to 115 jin, 120 jin, or 125 jin in Plans 1, 2, and 3 respectively. Gross output will reach 97.75 million, 102.00 million, or 100.00 million dan. Based on current circumstances, this can essentially meet social demand.

Under Plan 1 the oil crop growing area will measure 197.00 million mu; under Plans 2 and 3 it will measure 175.00 million and 144.00 million mu, respectively. Building on the 1990 base level, per-mu yields will reach either 221 jin, 233 jin, or 275 jin, and gross yield will measure either 436.00 million, 408.00 million, or 407.00 million dan, respectively. Figured at the 1982 oil conversion rate, the national average per capita holdings of edible vegetable oil may reach 13.1 jin, 12.3 jin, or 12.2 jin, respectively, in these three plans.

Under Plans 1 and 2 the sugar crop growing area will increase, expanding to either 30.00 million or 28.00 million mu, respectively, and the emphasis will continue to be on increasing beet growing area. By contrast, under Plan 3 the sugar crop growing area will be decreased to 22.00 million mu. Under these three plans the average per-mu yield for all sugar crops will reach either 6,100 jin, 6,143 jin, or 7,045 jin, and gross output will total 1,830.00 million, 1,720.00 million, or 1,500.00 million dan. This way, the average per capita sugar holdings will be 13.5 jin, 12.7 jin, or 11.4 jin. Under Plans 1 and 2 the sugar demand will be basically satisfied, but under Plan 3 we will continue to require a suitable quantity of imports.

The fiber crop growing area will be 10.00 to 12.00 million mu, slightly more than in 1990, and the average per-mu yield will not increase much. We will make appropriate adjustments in fiber crop composition: considering developments in ramie processing techniques, it is possible that we will suitably increase the proportion of ramie.

The tobacco growing area and per-mu yield will basically be maintained at 1990 levels, and the emphasis will be on improving quality. Gross yield will measure 27.30 to 31.02 million dan.

Because grain crops have expanded significantly in the past few years, the contradictory land competition between grain and cash crops has been alleviated. Hereafter, expansion of cash crop growing areas and gross yields will depend to a very large extent on commodity markets. In the three plans proposed here the cash crop growing areas are arrangeable and, with hard work, the unit yield levels are attainable (see Table 10).

c. Other Field Crops

We have proposed two plans for 1990. In Plan 1 the area sown in other field crops will be expanded to 238 million mu. This will primarily mean an increase of 36.00 million mu in green manure and fodder crops, to a total of 177 million mu. Vegetable growing area, on the other hand, will be constricted slightly to 50.00 million mu. In Plan 2 the area sown in other field crops will measure 218 million mu: green manure and fodder crops will total 157 million mu and vegetable crops will be further constricted to 47.00 million mu. Vegetables are primarily grown under intensive cultivation, and increasing gross output depends upon increasing unit yield.

We have proposed 3 plans for the year 2000. In these three plans the area sown in other field crops will be 244 million, 238 million, or 230 million mu, respectively. In Plans 1 and 2 the green manure and fodder crop area will be maintained at 178 million mu and the vegetable growing area will measure 60 million or 50 million mu, respectively. In Plan 3 the area sown in green

Table 10. Cash Crop Development Plans (in million mu, jin, and million dan)

	Present situation					
	Average 1978-1982			1983		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Cash crop total	244.45			266.41		
Cotton	75.93	72	54.59	91.16	102	92.74
Oil crops	119.04	139	165.47	125.85	168	211.00
Including:						
Rape	48.34	136	65.50	55.04	156	85.74
Peanuts	33.21	199	66.17	33.01	239	79.01
Sesame	12.12	61	7.40	11.84	59	6.97
Sunflowers	10.16	163	16.58	10.99	244	26.81
Huma	11.14	66	7.37	9.63	69	6.66
Sugar Crops	14.22	4,421	628.67	17.97	4,488	806.46
Including:						
Sugarcane	8.23	6,415	527.93	9.81	6,348	622.82
Beets	5.99	1,682	100.74	8.16	2,251	183.64
Fiber crops	9.50	286	27.14	5.84	428	25.00
Including:						
Jute, ambari hemp	4.92	455	22.38	3.41	599	20.38
Ramie	.75	111	.83			
Flax	1.02	287	2.93			
Leaf tobacco	11.43	223	25.47	11.52	240	27.65
Including:						
Flue-cured tobacco	8.98	254	22.81	8.58	268	22.99
Other cash crops	14.33			12.09		

	1990					
	Plan 1			Plan 2		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Cash crop total	324.30			298.20		
Cotton	85.00	110	93.50	80.00	110	88.00
Oil crops	181.00	185	335.00	161.00	199	321.00
Including:						
Rape	80.00	180	144.00	70.00	200	140.00
Peanuts	42.00	250	105.00	40.00	250	100.00
Sesame	14.00	80	11.20	12.00	100	12.00
Sunflowers	25.00	250	62.50	20.00	250	50.00
Huma	11.00	75	8.25	10.50	75	7.88
Sugar Crops	23.00	4,674	1,075.00	19.30	5,409	1,044.00
Including:						
Sugarcane	10.00	7,500	750.00	9.30	8,000	744.00
Beets	13.00	2,500	325.00	10.00	3,000	300.00
Fiber crops	9.00	430	38.70	8.00	430	34.40
Including:						
Jute, ambari hemp	5.00	610	30.50	4.00	610	24.40

Table 10 (continued)

Ramie	1.00	140	1.40	.80	140	1.12
Flax	1.50	75	1.13	1.50	75	1.13
Leaf tobacco	12.00	300	36.00	8.90	300	26.70
Including:						
Flue-cured tobacco	9.20	300	27.60	8.00	300	24.00
Other cash crops	14.50			14.50		

2000

	Plan 1			Plan 2			Plan 3		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Cash crop total	350.50			322.00			279.10		
Cotton	85.00	115	97.75	85.00	120	102.00	80.00	125	100.00
Oil crops	197.00	221	436.00	175.00	233	408.00	144.00	275	407.00
Including:									
Rape	90.00	250	225.00	80.00	250	200.00	60.00	300	130.00
Peanuts	45.00	270	121.50	40.00	300	120.00	40.00	350	140.00
Sesame	14.00	110	15.40	12.00	120	14.40	12.00	140	16.80
Sunflowers	25.00	250	62.50	20.00	250	50.00	15.00	300	45.00
Huma	12.00	80	9.60	11.00	90	9.90	10.00	100	10.00
Sugar crops	30.00	6,100	1,830.00	28.00	6,143	1,720.00	22.00	7,045	1,550.00
Including:									
Sugarcane	12.00	10,000	1,200.00	10.00	10,000	1,000.00	9.00	10,000	900.00
Beets	18.00	3,500	630.00	18.00	4,000	720.00	13.00	5,000	650.00
Fiber crops	12.00	440	52.80	11.00	450	49.50	10.00	450	45.00
Including:									
Jute, ambari hemp	5.00	650	32.50	5.00	650	32.50	4.70	700	32.90
Ramie	1.20	160	1.92	1.00	180	1.80	.80	200	1.60
Flax	2.40	110	2.64	2.00	110	2.20	1.40	120	1.68
Leaf tobacco	12.00	330	39.60	8.60	330	28.38	8.60	330	28.38
Including:									
Flue-cured tobacco	9.40	330	31.02	7.80	350	27.30	7.80	350	27.30
Other cash crops	14.50			14.50			14.50		

manure and fodder crops will total 173 million mu and the vegetable growing area will be maintained at 50 million mu (see Table 11).

d. Fruit Trees, Tea, Silkworm Cocoons, and Rubber

China has a vast area of hilly and mountainous land that can be used to develop diverse economic forests. There is also a very great potential here for using unplowed land resources to produce various foods or daily necessities. The pace at which growing area and output for these kinds of crops develops is primarily restricted by social and economic conditions and the level of consumer demand. Historically speaking, these kinds of products have developed quite rapidly: in the 30 years from 1950 to 1980 gross orchard output increased 4.2-fold, expanding at an average rate of 5.6 percent per year; gross tea output increased 3.7-fold, expanding at an average rate of 5.3 percent per year; the gross output of silkworm cocoons increased 9.4-fold, expanding at an average rate of 8.1 percent per year; and rubber developed even faster. However, up to now the average per capita holdings of products

Table 11. Other Field Crop Development Plans (in million mu, jin, and billion jin)

	Present situation Average 1978-1982			1983		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Other field crop total	203.65			182.78		
Green manure	114.11	2,000	228.2	85.21		
Fodder crops	26.55					
Vegetables	51.17	3,163*	161.9	61.53		

	1990 Plan 1			1990 Plan 2		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Other field crop total	238.00			218.00		
Green manure	150.00	2,500	375.0	130.00	2,500	32.50
Fodder crops	27.00			27.00		
Vegetables	50.00	4,000	200.0	47.00	5,000	23.50

	2000 Plan 1			2000 Plan 2			2000 Plan 3		
Crop	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output	Sown area	Per-mu yield	Gross output
Other field crop total	244.00			238.00			230.00		
Green manure	150.00	3,000	450.0	150.00	3,000	450.0	125.00	3,000	375.0
Fodder crops	28.00			28.00			48.00		
Vegetables	60.00	5,000	300.0	50.00	6,000	300.0	50.00	6,000	300.0

(*1980 per-mu yield)

of these crops have remained quite small and there is a need for further development.

Fruit: China has a prolific variety of fruit tree resources, as well as favorable natural conditions for developing orchard production. However, our current output is low and quality is poor. In 1980 the average per-mu yield was only 508 jin, and average per capita fruit holdings measured only 13.5 jin. According to the higher plan, by 1990 average per capita fruit holdings may reach 27.5 jin; according to the lower plan they may reach 23.5 jin. We have also proposed high and low plans for the year 2000: under the higher plan average per capita holdings may reach 56 jin and under the lower plan they may reach 40.3 jin. As we raise output we must also work hard to improve quality.

Tea: China has many famous specialty varieties of tea, and these are a major export commodity. In the past few years, due to quality and market problems, tea expansion has been greatly restricted. In view of this situation we have proposed two plans: one to maintain existing growing area and one to constrict growing area. Both plans rely on increasing unit yield to raise gross output. By 1990, under the higher plan average per capita tea holdings will measure 1.1 jin and under the lower plan they will total 0.9 jin; by 2000, under the higher plan they will measure 1.5 jin and under the lower plan they will total 1.4 jin. Quality will be somewhat improved in all cases.

Silkworm cocoons: In recent years silkworm cocoon production has grown rapidly, but, because quality has declined, problems with unsaleability have occurred. Taking into account the state of the domestic market and foreign trade demands, we have proposed one plan for 1990 that calls for a fairly slow increase in gross yield. For 2000 our high plan calls for growing area to expand 50 percent and gross yield to double over 1990, and our low plan calls for growing area to be maintained at the 1990 level and gross yield to increase by one-third. At that time average per capita holdings may reach 1.3 jin or 0.8 jin, respectively in these two plans, and quality will be distinctly improved.

Rubber: Although rubber production has grown rapidly in China we are still unable to meet demand and must import a large quantity each year. We should continue major development efforts. By 1990 our rubber growing area will be expanded to 7.50 million mu, the average per-mu yield will total 80 jin of dry rubber, and gross output may reach 300,000 tons; by 2000 the growing area will be further expanded to 8.50 million mu, the average per-mu yield will total 106 jin of dry rubber, and gross output may reach 450,000 tons.

A comprehensive survey of the future pace of development for these crops (see Table 12) shows that, except for silkworm cocoons, which will expand at a slower pace than in the past 30 years, all crops will exceed the pace of development sustained during the past 30 years. In the future the focus of development should be on raising unit yields, improving quality, and increasing the value of output. In addition, we must actively develop production of various kinds of medicinal materials and local specialty products, expand our markets, and increase exports.

2. Results of System Simulation Model and Regression Model Calculations

We have applied system theory principles to construct an organically integrated overall picture of grain and cash crop development and the factors affecting that development. We have observed and studied the dynamic relations, constructed a mathematical model of the interrelation of production function and composite function, combined calculations from multivariate regression and time series models, and conducted an overall simulation. After calculating per-mu yield according to production function and sown area according to composite function, we have sought gross output results for each crop, as follows: For 1990 we calculate 826.7 billion jin of grain, 94.05 million dan of cotton, 296.46 million dan of oil crops, 847.96 million dan of sugar crops, 24.96 million dan of jute and ambari hemp, and 21.49 million dan of tobacco; for 2000 we calculate 999.3 billion jin of grain, 112.50 million dan of cotton, 484.38 million dan of oil crops, 1,340.90 million dan of sugar crops, 30.28 million dan of jute and ambari hemp, and 25.06 million dan of tobacco. Except for sugar crops, which show a notably lower gross output in these calculations, gross outputs for all of these crops essentially coincide with the trends predicted above (see Table 13).

Table 12. Fruit, Tea, Silkworm Cocoons, and Rubber Development Plans (fruit, tea, and silkworm cocoons measured in million mu, jin, and million dan; rubber measured in million mu, jin, and thousand tons)

	Present Situation Average 1980-82			1983		
Crop	Area	Per-mu	Gross	Area	Per-mu	Gross
Fruit	26.74	508	135.85	30.22	628	189.74
Tea	15.61	39	6.07	16.57	48	8.01
Silkworm Cocoons	4.31	116	5.00	5.82	92	6.80
Rubber	4.83	43	103	7.12	48	172

	1990			2000		
Crop	Area	Per-mu	Gross	Area	Per-mu	Gross
Fruit	(1) 38.90	677	263.20	50.25	959	484.40
	(2) 42.88	718	308.00	56.59	1,188	672.00
Tea	(1) 16.00	76	12.17	16.00	102	16.36
	(2) 13.00	80	10.37	13.00	136	17.71
Silkworm Cocoons	5.00	150	7.50	(1) 5.00	200	10.00
				(2) 7.50	200	15.00
Rubber	7.50	80	300	8.50	106	450

Note: (1) represents Plan 1, (2) represents Plan 2

Table 13. Results of System Simulation Model Calculations (area in million mu, per-mu yield in jin, gross output in billion jin (for grain) and million dan (for all others))

Crop	1990	2000

	Sown	Per-mu	Gross	Sown	Per-mu	Gross
Grain	172.40	479	826.7	172.00	581	999.3
Cotton	95.00	99	94.05	90.00	125	112.50
Oil crops	162.00	183	296.46	234.00	207	484.38
Sugar crops	17.00	4,988	847.96	23.00	5,830	1,340.90
Jute, ambari hemp	4.00	624	24.96	4.00	757	30.28
Flue-cured tobacco	7.00	307	21.49	7.00	358	25.06

In the regression model analysis, we took the nine factors directly affecting output formation, applied a total of 24 years of statistical data for the years 1952 to 1958 and 1964 to 1980, and calculated a multivariate regression equation:

$$Y = 306.53 + 0.13965x_1 + 0.27595x_3 + 5.4739x_4 + 0.0387x_5 + 94.1495x_6 - 0.2866x_7 - 0.2745x_8 + 0.01422x_9$$

For the year 2000 the forecasted values for these nine factors are as follows: 24 million tons of chemical fertilizer (active components), 27 million tons of organic fertilizer, 870 million mu of effective irrigation, 32.0 billion yuan of expenditures, 350 million HP of total agricultural machine power, 200 million mu of flood and drought disaster area, 1 to 2 variety replacements, and 1.74 billion mu of stable sown land area. Through the model analysis we arrived at a gross grain output of 994.8 billion jin, with an error of +/- 30 billion jin; that is, between 964.8 and 1,024.8 billion jin. This figure essentially coincides with the gross grain output forecasted above.

D. Production Composition In the Planting Industry

Establishing a reasonable composition in agricultural production is essential for making the best use of natural agricultural resources and promoting coordinated development among grain, cash crops, and other industries.

1. Analysis of the Components of Sown Area

As far as the arrangement of grain, cash crop, and other crop area is concerned, the three must have a certain coordinated relationship. In historical perspective, from 1952 to 1963 the grain crop per-mu yield fluctuated below 200 jin and grain crops occupied 84.8 to 87.9 percent of the total sown area, while cash crops occupied 6.3 to 9.2 percent and other crops accounted for 3.3 to 7.0 percent (figures here and below exclude 1958 to 1960). Between 1964 and 1973 the per-mu grain yield rose to under 300 jin and grain crops occupied 81.2 to 85 percent of the sown area, while cash crops accounted for 8.1 to 8.6 percent and other crops covered 6.6 to 9.8 percent of the sown area. Between 1974 and 1978 the per-mu grain yield rose to under 350 jin and grain crops occupied 80.3 to 81.4 percent of the sown area, while cash crops accounted for 8.7 to 9.6 percent and other crops covered 8.7 to 9.6 percent of the sown area. Between 1979 and 1981 the per-mu grain yield rose to over 350 jin and grain crops occupied 78.3 to 80.3 percent of the sown area, while cash crops accounted for 10 to 13 percent and other crops covered 8.6 to 9.7 percent of the sown area. From this it is obvious that as the unit grain yield increases the proportion of total sown area devoted to grain crops gradually decreases and it is possible for the proportions devoted to cash crops and other crops to rise correspondingly. Consequently, in 1990 and 2000 the proportion of total sown area devoted to grain crops will be 75.3 to 76.5 percent and 74.2 to 76.3 percent, respectively. The proportion devoted to cash crops will be 13.6 to 14.3 percent and 13.0 to 15.2 percent, respectively, and other crops will basically stabilize at a level of approximately 10 percent (see Table 14).

2. Gradually Establish a Planting Composition of Grain Crops, Fodder Crops, and Cash Crops

For a long time past, because per capita grain rations were scanty we were basically only able to maintain grain to support people; the proportion of fodder grain was very small and there were no special arrangements for fodder cropland. For the past two years we have reaped successive bumper harvests and per capita grain holdings have surpassed 700 jin, so the quantity of grain for livestock raising has increased. According to statistical data, in 1982

108.0 billion jin of fodder grain was used in livestock husbandry, approximately 17 percent of all grain consumed. In 1983 regional grain gluts appeared in many places, and, because grain varieties were unsuitable, in the south nearly 20.0 billion jin of rice was fed to pigs and there were also isolated northern places where wheat and other fine grains were fed to pigs. This is an extraordinarily uneconomical practice. Right now per capita grain holdings exceed 700 jin and we have succeeded in becoming more than self-sufficient in grain. Under these circumstances a new trend has appeared: there has been a transformation in grain crop production from self-support and direct utilization, which has long been the rule, to conversion and indirect utilization. Except for some grain that is converted into raw materials for the food industry, a considerable portion of it is converted to fodder grain. To adapt to this situation and improve economic benefits derived from grain and the entire planting industry, it is essential that we establish a planting composition of grain crops, fodder crops, and cash crops, inject fodder crops into the planting industry, and affix them a certain position in agriculture. In view of these considerations, we propose that we undertake gradual readjustments in the following areas:

Table 14. Plan for Components of Sown Area (in billion mu; percentages in parentheses)

Item	Present situation 1978-1982 average	Present situation 1983	1990 Plan 1	1990 Plan 2	2000 Plan 1	2000 Plan 2	2000 Plan 3
Total sown area	22.04 (100)	21.60 (100)	22.72 (100)	21.96 (100)	23.04 (100)	22.70 (100)	21.49 (100)
Including:							
Grain crops	17.56 (79.7)	17.11 (79.2)	17.10 (75.3)	16.80 (76.5)	17.10 (74.2)	17.10 (75.3)	16.40 (76.3)
Cash crops	2.44 (11.1)	2.66 (12.3)	3.24 (14.3)	2.98 (13.6)	3.50 (15.2)	3.22 (14.2)	2.79 (13.0)
Other crops	2.04 (9.2)	1.83 (8.5)	2.38 (10.4)	2.18 (9.9)	2.44 (10.6)	2.38 (10.5)	2.30 (10.7)

First, in the southern paddy district we should suitably expand cultivation on 30.00 to 50.00 million mu of corn interplanted with soybeans or else grow high-yield fodder rice; in the North and Northeastern Regions we should suitably expand cultivation on 30.00 to 50.00 million mu of dry paddy (which requires only one-third of the water volume needed for wet paddy). This will both increase the supply of husked rice in the north and allow an increase of on-the-spot decisions in the south regarding fodder grain supplies. In addition, it will allow us to maintain an essential balance between output from paddy and corn areas.

Second, we should gradually switch one-tenth of the sown corn area, 27 to 30 million mu, over to cultivation of silage corn. This alone could be used to raise 3.00 million-plus head of dairy cattle and increase the per capita milk supply nationwide by 20 jin.

Third, on some corn and sorghum land we should institute soybean and other legume intercropping and interplanting and mow this by stages to expand the sources of protein fodder. If we intercrop or interplant soybeans on 50 percent of the sown corn and sorghum areas we can improve the soybean harvest by 8.5 billion jin and reap a large quantity of bean stalks, and we can also use the biological nitrogen-fixing function of legume crops to improve soil fertility.

Fourth, we should gradually expand green manure crops from the current 100 million mu to 150 million mu and handle them as we do agricultural grassland: as far as possible we should use them for fodder and then return the animal manure to the land. Thus we can both increase protein fodder and fertilize the land.

Fifth, we should use the 30 million mu or so of high-yield potato crops as fodder crops.

The above five suggestions plus the existing fodder crop area could bring the crop area used for growing fodder up to nearly 500 million mu. If we make these readjustments we will bring about a major transformation in production composition within the planting industry overall. That is, we will change from the current grain crop and cash crop composition (including vegetables and other crops) to one comprised of 1.4 billion mu of grain crops, 500 million mu of fodder crops, and 400 million mu of cash crops (including vegetables and other crops). Thus, grain crops, fodder crops, and cash crops will each be properly provided for. In the future we must use readjustment to establish gradually a new production composition in the planting industry--one in which agriculture and animal husbandry, and grain rations and fodder grain are integrated and there is comprehensive development of both grain production and the diversified economy.

3. Coordinate Grain and Cash Crop Development

For a long time the contradiction between grain and cash crops has been a prominent problem in Chinese agricultural production. The relationship between the two is determined primarily by two factors: the first is the level of grain production, or perhaps we can expand this to the level of food production overall; the second is the national income level, or perhaps we can constrict this to the level of people's consumption funds.

The contradiction between grain and cash crops is manifested primarily in conflicts over land, seasons, fertilizer, water, and labor, particularly focused on sown area. For a long time there has been very little surplus land available for making adjustments between grain and cash crop area. Historically, this situation developed as follows: 1) When national average per capita grain holdings have been 600 jin the people have just been able to make do, and at those times the sown cash crop area has generally accounted for about 9 percent of the total sown area (as from 1955 to 1958). 2) When average per capita grain holdings have been less than 500 jin the people have lived in straitened circumstances, and at those times the sown cash crop area has generally accounted for approximately 7 percent of the total sown area (as from 1961 to 1963). 3) When average per capita grain holdings have been between 540 and 590 jin, the people have been hard pressed, and at those times the sown cash crop area has generally accounted for about 8 percent of the total sown area (as from 1964 to 1972). 4) When average per capita grain holdings have been from 640 to 680 jin the people have fared quite well, and at those times the sown cash crop area has generally accounted for 10 percent of the total sown area (as from 1979 to 1981).

Since the 3d Plenum of the 11th Central Committee we have put into effect a series of policies beneficial to developing agricultural production. From 1978 to 1981 the state imported about 80.00 billion jin of grain and reduced grain purchases from farmers. In addition, during that 3 years the combined grain production increment of 40.00 billion jin was left in the countryside and farm product procurement prices were increased. This last factor alone raised peasant income 40.00 to 50.00 billion yuan during that three year period. Because we adopted these policies the peasants were able to recuperate and build up their strength and the entire rural economy was envigorated. We reaped bumper harvests 2 years running in 1982 and 1983 and average per capita grain holdings surpassed 700 jin. The grain situation took an unprecedented turn for the better and cotton, oil crops, fiber crops, tobacco, and other cash crops even began to accumulate overstocks. At this time the proportion of total sown area devoted to grain crops dropped for the first time below 80 percent and the proportion devoted to cash crops rose for the first time above 10 percent. The facts show that after people's subsistence problems are basically resolved the major limiting factors on cash crop development are not grain production problems; rather they are market demand and the people's purchasing power and consumption level. Hereafter these will be a fundamental feature of cash crop development.

4. The Composition of Output Value in the Planting Industry

Grain crops have long represented the major proportion of output value in the planting industry; they have essentially maintained a 70 percent share. This disproportionate ratio reflects the fact that cash crops and various other crops have not developed correspondingly. In the past few years, because we have adopted measures to readjust production composition in the planting industry, this situation has gradually taken a turn for the better, but we still need to continue making readjustments. According to production forecasts for various crops and calculations based on 1980 fixed prices, the gross value of output in the planting industry will rise from 141.5 billion yuan in 1980 to 204.4 billion yuan in 1990 and 251.7 billion yuan in 2000. Of this, the proportion devoted to grain crops will drop from 72 percent in 1980 to 69 percent and then to 68 percent; the proportion devoted to cash crops will increase from 16 percent in 1980 to 19 percent and then to 20 percent; other crops will be basically maintained at a 12 percent level (see Table 15).

Table 15. Plan for Output Value Composition in the Planting Industry (in billion yuan)

Item	1980		1990		2000	
	Output value	%	Output value	%	Output value	%
Planting industry						

total	141.5	100	204.4	100	251.7	100
Grain crops	101.4	72	140.0	69	172.2	68
Cash crops	22.7	16	39.6	19	50.0	20
Other crops	17.4	12	24.8	12	29.5	12

In order to analyze changes in the proportion of gross agricultural output value contributed by the planting industry, as well as to look at the question of accumulation funds in agriculture itself, we have consulted output values, calculated by the relevant departments, for forestry, animal husbandry, and fishery in the years 1990 and 2000, added in rough calculations of industrial and sidelines output values for 1990 and 2000, and conducted a preliminary inquiry into statistical avenues for figuring the composition of output values in the quadrupled gross agricultural output value.

In the first calculation, gross agricultural output value includes team-run industries, and the proportion contributed by the planting industry will decline from 63.7 percent in 1980 to 46.0 percent in 1990 and 28.3 percent in 2000. The proportion contributed by forestry output value will increase from 4.3 percent in 1980 to 5.6 percent in 1990 and then drop to 4.5 percent in 2000. Animal husbandry will drop from 15.3 percent in 1980 to 14.6 percent in 1990 and then rise to 16.9 percent in 2000. Industrial and sidelines enterprises (including team-run industries) will rise from 15.1 percent in 1980 to 31.8 percent and then to 48.6 percent. The fishery share will not change significantly: in 1980 it was 1.7 percent, in 1990 it will be 2.0 percent, and in 2000 it will be kept to the 1.7 percent level.

In the second calculation, gross agricultural output value includes township and town enterprises, and the proportion contributed by the planting industry will drop from 56.0 percent in 1980 to 40.5 percent in 1990 and 24.9 percent in 2000. The forestry share will increase from 3.7 percent to 5.0 percent and then drop to 4.0 percent. Animal husbandry will decline from 13.5 percent to 12.9 percent and then increase to 14.9 percent. Sidelines will rise from 5.1 percent to 7.6 percent and then 7.7 percent. Fishery will increase from 1.5 percent to 1.8 percent and then return to 1.5 percent. Township and town enterprises will jump from 20.2 percent to 32.4 percent and then 47.1 percent.

In these two calculations of output value composition, although forestry, animal husbandry, and fishery output values will increase by a large margin, their proportional share of gross output value will not change much. However, the proportions contributed by township and town enterprise and team-run sidelines will shoot up until they comprise nearly 50 percent of gross output value in 2000. These changes in the composition of agricultural output value will induce a series of changes in the overall composition of rural productive forces and labor power, as well as in the structure of other industries. This is a feasible means of providing our own accumulation funds for agricultural production development.

E. Expand Food and Fodder Resources

1. Expand Food Resources

Based on an analysis of the above calculations of production capacities and growth rates for grain and other crops, by the end of this century China's food sources will still be primarily grain, vegetable oil, sugar, fruit, vegetables, and other food cash crops, and these will have grown by a fairly large margin. We have also accomplished a preliminary examination of other food sources.

a. Prospects for Developing Animal Foods

In recent years, because grain production has increased rapidly, animal foods have also developed rather quickly. In 1982 the average national per capita output of meat, milk, and eggs was 26.8 jin, 3.9 jin, and 5.6 jin, respectively, and fodder grain consumption rose to 108.0 billion jin. Based on estimates of different potential for fodder resources and different fodder conversion rates for livestock and animal feed, we have proposed two plans: in the wake of expanded grain production, by the year 2000 we estimate that we may be able to supply either 295.0 billion jin or 348.0 billion jin of fodder grain (see Table 16). Based on typical surveys of current grain and meat consumption, grain rations do not decrease distinctly until the average per capita consumption of meat, eggs, fish, and other animal products exceeds 100 jin. When average per capita meat consumption is 50 to 66 jin the amount of decrease in grain rations is limited. Particularly in rural areas, because the supply of other non-staple foods is rather small and living conditions are limited, it is still difficult to achieve balanced consumption. Consequently, when sales of meat, eggs, fish, and other animal products increase it is still possible for the grain ration to rise. In view of this situation we cannot depend on constricting grain rations to increase fodder grain. Rather, we must further develop feed sources and improve the rate of return on feed.

Table 16. Predictions of Animal Foods Output and Concentrated Feed Consumption in the Year 2000

	Animal foods output			
	Lower limit plan		Higher limit plan	
Animal product	Per capita average (jin)	Total (billion jin)	Per capita average (jin)	Total (billion jin)
Meat	48	57.6	60	71.95
Milk	48	57.6	50	60.0
Eggs	22.6	27.12	25	30.0

	Concentrated feed consumption (billion jin)	
Feed	Lower limit plan	Higher limit plan
Unprocessed food grain	295.0	348.0
Grain chaff	65.0	76.0
Dregs cakes	17.0	24.0
Total	377.0	448.0
Actual feed used (after deducting 21.0 billion jin of ordinary feed)	356.0	427.0

Right now 95 percent of China's meat products come from agricultural districts, and only about 4 percent (approximately 600 to 800 million jin) come from pastoral districts. China has 3.3 billion mu of grasslands that can be used, and they produce an average of less than 0.3 jin of meat per mu. By the end of this century it is entirely possible that we can increase grassland meat output 1- to 2-fold over the current level if we can construct 500 million mu of man-made grasslands and 500 million mu of corrals, open up 500 million mu of waterless grass farms, exterminate rodents on 700 million mu of land, and enhance scientific management on all sorts of grasslands to further improve grass output.. However, even if we do, we can only produce 1.6 to 2.4 billion jin of meat products, for an increase of no more than 1.3 to 2.0 jin per capita nationwide. This will still represent about 4 percent of the gross output of all meat products at that time.

As for the supply of aquatic products, China has a total of 280 million mu of freshwater area, of which 75 million mu can be used to breed aquatic products. We are now using only about 57 percent of this, and the average per-mu yield is only several tens of jin. We breed aquatic products on only 2.08 million mu of saltwater area, which is less than one-tenth of the total breeding area available to us. If only we persist in concentrating on breeding while also integrating breeding with fishing, by the year 2000 the gross output of aquatic products could rise from the current 5.00 million-plus tons to 311.00 million tons, thus meeting the average national demand of 18 jin per capita.

b. Production Potential for Ligneous Food and Oil Crops

China now cultivates ligneous edible oil crops on 85 million mu of land and annually produces approximately 100 million jin of oils and fats, of which tea-seed oil accounts for 80 percent (at only about 6 jin per mu). Ligneous food crops, primarily chestnuts, jujubes, and persimmons, are cultivated on 10.80 million mu of land and produce a total of approximately 1.9 billion jin per year. Based on national population, for many years now average per capita holdings amounted to 0.3 jin of ligneous oil products and 1.9 jin of ligneous food products. A considerable portion of this is marketed abroad and the amount we actually consume ourselves is still extremely small. We propose three plans forecasting development for the year 2000:

Plan 1: Gross output of ligneous oil crops (converted to oil) will be 1.63 billion jin, or 1.4 jin per capita. Gross output of ligneous food crops will be 3.66 bilion jin, or 3.1 jin per capita.

Plan 2: Gross output of ligneous oil crops (converted to oil) will be 2.31 billion jin, or 1.9 jin per capita. Gross output of ligneous food crops will be 6.00 bilion jin, or 5.0 jin per capita.

Plan 3: Gross output of ligneous oil crops (converted to oil) will be 2.31 billion jin, or 1.9 jin per capita. Gross output of ligneous food crops will be 15.50 bilion jin, or 12.9 jin per capita.

Of the above three plans, Plan 3 is the ideal plan based on production potential. If we adopt certain incentive policies, open marketing channels, enhance scientific management, and increase some material inputs, it will be possible to accomplish this plan. Generally speaking, Plan 1 will be relatively easy to accomplish just by holding to present policies and conventional management. For ligneous food crops Plan 3 falls between the other two and will be attainable through strenuous efforts.

2. Expand Fodder Sources

Fodder resources in China are abundant and varied, but due to the effects of natural, technological, and economic conditions and other factors, there has been restricted development and utilization of many fodder resources. We project that by the end of the century fodder resources will still be dependent primarily on grain, chaff, dregs cakes, and straw (including legume crops). Of course, we will make significant progress in developing and utilizing northern grasslands and southern grassy mountain and slope land. We have explored methods of opening up fodder sources just from the following few angles, and we have also analyzed fodder resource development potential for the year 2000.

a. Concentrated Feed Resources

On a foundation of grain and cash crop development we must increase the quantities of unprocessed food grains, grain chaff, dregs cakes, and straw provided for fodder. By readjusting production composition in the planting industry we must actively expand legume crop cultivation. We must improve our utilization ratio by returning green manure and fodder straw to the land as animal manure. We must use breeding methods to increase the content of protein, lysine, and other nutritional components in fodder crops. We predict that by the year 2000 we will be able to use for fodder approximately 300.0 billion jin (about 30 percent) of the gross grain output of 985.0 to 1,053.7 billion jin (see Table 16), 65.0 to 76.0 billion jin (about 70 to 80 percent) of the gross grain chaff output of 100.0 billion jin, and 170 to 240 jin [figure as published] (about 50 to 70 percent) of the gross output of dregs cakes totalling 34.0 billion jin. In addition, we must integrate farming and animal husbandry and adopt reasonable crop rotation among farm crops and fodder and green manure crops. If we plan for 40.00 to 50.00 million mu of alfalfa we can harvest 16.0 to 20.0 billion jin of dried alfalfa (figured at a per-mu yield of 400 jin); if we plan for 150 million mu of green manure we can reap 105.0 billion jin of dried green manure stalks and leaves (figured at a per-mu yield of 700 jin). The two of these will combine to make 121.0 to 125.0 billion jin, with a nutritional value equivalent to 121.0 to 125.0 billion jin of concentrated feed.

b. Coarse Fodder Resources

Forage grass: By constructing man-made grass farms and other measures, by the end of this century we will bring the average per-mu yield in the north up to 250 to 400 jin of dried grass on the 600 million mu of rich grasslands, for a possible yield of 150.0 to 240.0 billion jin. On the 1.56 billion mu of arid grasslands the average per-mu output will measure 140 to 300 jin of dried grass, for a possible yield of 216.0 to 468.0 billion jin. On the 1.14 billion jin of desert grasslands the average per-mu yield will measure 50 to 150 jin of dried grass, for a possible yield of 57.0 to 171.0 billion jin. In the south, on the 700 million mu of usable grassy mountainsides and slopelands the average per-mu yield will total 650 to 800 jin of dried grass, for a possible yield of 460.0 to 560.0 billion jin. The above four sources combined may produce 883.0 to 1,430.0 billion jin of dried grass. If we figure on a 70 percent utilization ratio we will be able to provide 618.1 to 1,007.3 billion jin of dried grass for fodder.

Straw: Extrapolating from predictions of gross output for grain and other crops, by the end of the century we will be able to produce about 1,248.0 billion jin of grain straw, 48.0 billion jin of oil-crop stalks, and 17.0 billion jin of sugar-crop stalks. A combination of these three totals 1,313.0 billion jin of straw and stalks. If we figure on a 60 to 65 percent utilization ratio, we may supply 787.8 to 853.5 billion jin of straw for fodder.

Based on the above calculations of dried grass and straw production, by the end of the century we will be able to supply approximately 1,405.9 to 1,860.8 billion jin of coarse fodder.

c) Green Fodder Resources

We must actively utilize water area to develop water hyacinths, water amaranths, water lettuce, and red and green duckweed. If we expand cultivation of green fodder crops, and their improve unit yields, based on 150 to 200 million mu of growing area these sources combined can provide 1.5 to 2.0 trillion jin of green fodder.

d) Other Fodder Resources

Avenues to opening other fodder resources: 1) Create the conditions for large-scale production of yeast, bacteria, algae, and other unicellular protein feeds; 2) Develop and utilize insects or other small animals such as earthworms, snails, and so forth as sources of protein feeds; 3) Dig up wild high-protein plant resources such as false indigo; 4) Utilize pieces leftover after processing animal products and produce animal-based feeds.

e. Production of Feed Additives

First we must bring production of fodder urea up to about 200,000 tons. Second, we must produce amino acids, trace elements, growth hormones, and so forth to improve the nutritional value of feed and increase the return from its use.

In order to develop and utilize various fodder resources to the fullest and improve our resource utilization ratio, we must correspondingly construct a feed production base, energetically develop the feed industry, and gradually establish a feed production system and a reasonable distribution and composition of feed production.

III. Measures We Must Adopt To Achieve Projected Growth Targets

Achieving the above projected growth targets not only depends on improving production conditions and making reasonable use of our various natural resource advantages, it also hinges on what economic, technological, and administrative and management measures we adopt.

A. Increase Material Inputs and Fashion a Corresponding Production Capacity

1. Chemical Fertilizer

According to relevant specialized research and projections of nutrient absorbtion for each crop based on the amount of fertilizer it requires, by the year 2000 we will need a total of roughly 139,271,000 tons of chemical fertilizer. Of this, we will need 71,215,000 tons of ammonium sulphate, 35,000,000 tons of superphosphate, and 33,056,000 tons of potassium sulphate. In addition, according to the results of mathematical model calculations of Chinese chemical fertilizer production which were conducted by the Land Fertility Institute of the Chinese Academy of Agricultural Sciences and the Applied Mathematics Institute of the Chinese Academy of Sciences, by the end of the century China will need a total of 120 to 150 million tons of chemical fertilizer. Second, we must stress scientific fertilizer application. If we raise our fertilizer utilization ratio from the current level of less than 30 percent up to 40 percent, it will be equivalent to applying an extra 10.00 million tons or more of chemical fertilizer per year nationwide, and it will allow the peasants to save 2.0 billion yuan and increase grain output 30.0 billion-plus jin per year. Third, adopting measures combining chemical and organic fertilizers will further improve the varietal composition of fertilizer and gradually readjust the nitrogen, phosphorus, and potassium ratio from the current 1:0.25:0.002 to about 1:0.6:0.2, thus improving results. In addition, based on China's chemical fertilizer mineral sources and the current production capacity of chemical industry equipment, the chemical fertilizer industry has preliminary plans to attain production of approximately 120 million tons of standard fertilizer by the end of the century. This can only meet the lower limit of demand.

2. Irrigation

Since the founding of the PRC we have extended irrigation an average of over 15.00 million mu per year. However, irrigated land holdings in China amount to an average of only 0.83 mu per capita in the farming population, or about one-half of the average world level. Right now 295.00 million mu, about 58 percent, of China's high-yield land is irrigated; 222.00 million mu, about 45.5 percent, of our moderate-yield land is irrigated; and 171.00 million mu, about 22.8 percent, of our low-yield land is irrigated. In the future, in addition to continuing to enhance existing field irrigation conveyance systems and to improve results from irrigation water, we must also appropriately expand irrigated area as water source conditions permit. Because water source conditions differ, current irrigation water quotas may be as high as 1,100 cubic meters or as low as less than 400 cubic meters. Figured at an average water use of 660 cubic meters, if we want to achieve the above projected crop output targets we must seek to add 200 million mu of irrigated area to the existing irrigation base. Precipitation is distributed unevenly in China--more in the south and less in the north--and the average perennial precipitation nationwide (630 mm) is only 64.9 percent of the world average (970 mm). Because precipitation is scarce, and because it is concentrated largely in the summer, generally speaking we do not have an overabundance of water resources, so we must be even more careful in developing and using them. Our focus in developing irrigation facilities must continue to be on the North China Plain and the Northeast Plain. In these regions cultivated land is even and level, water conditions are convenient, and irrigation produces fairly high results. In the Southwest and Northwest Regions we must select places where water and electricity conditions are advantageous to expand irrigated area.

3. Agricultural Machinery

a. Based on various calculations--typical high-yield calculations for southern and northern regions, current typical examples of southern high-yield counties and cities and northern counties already producing yields of 560 jin or so per mu of sown land, agricultural machine power per 100 mu (11 to 19.4 HP in the south and about 20 HP in the north), and total cultivated land area (591,472,000 mu in the south and 899,007,000 mu in the north)--we will need a total of 245 to 295 million HP.

b. According to calculations of current farm machinery conditions on high-, moderate-, and low-yield land, in 1980 the nation averaged 24.76 HP per 100 mu of high-yield land, 17.86 HP per 100 mu of moderate-yield land, and 10.84 HP per 100 mu of low-yield land. If we extrapolate based on raising output on low-yield land up to the level of moderate-yield land, raising output on moderate-yield land up to the level of high-yield land, and raising output on high-yield land about 20 percent, by the year 2000 we will need 276 million HP of farm machinery.

Figuring from the above two methods, we will need to raise total farm machine power from 200 million HP in 1980 to 250 to 300 million HP by 2000. Our focus should be on replacing machinery and adopting complementary sets of equipment to improve utilization efficiency.

4. Rural Electricity Consumption

Calculating based on current electricity consumption on high-, moderate-, and low-yield lands, in 1980 China used an average of 16.86 billion kwh of electricity on high-yield land, 8.95 billion kwh on moderate-yield land, and 6.27 billion kwh on low-yield land. If we extrapolate based on raising electricity consumption on low-yield land up to the level of moderate-yield land, raising consumption on moderate-yield land up to the level of high-yield land, and raising consumption on high-yield land about 20 percent, rural electricity consumption will rise from 32.1 billion kwh in 1980 to over 46.0 billion kwh in 2000, for an average of over 30 kwh per mu of cultivated land.

5. Agricultural Pesticides and Agricultural Plastic Sheeting

According to projections in relevant special studies, demand for agricultural pesticides will rise from 193,000 tons in 1980 to 210,000 tons in 1990 and 2000. Within this, in 1990 the ratio of insecticides, germicides, and herbicides will be 8:1:1, and by 2000 this will gradually be adjusted to 6:2:2. The need for agricultural plastic sheeting will increase from 119,000 tons in 1980 to 560,000 tons in 1990 and about 700,000 tons in 2000.

We should point out that the natural process of agricultural production is a process of biological reproduction through energy conversion. The general trend is that the more energy is invested the more products will be produced. If there is no set energy investment there can be no set production outcome. By historical comparison, in 1952 China invested a total of 2.01 billion joule per mu of cultivated land (here and below, this includes labor, animal power, seed, organic fertilizer, machinery, fuel, electric power, chemical fertilizer, and agricultural pesticides) and harvested an average per-mu grain yield of 225 jin. In 1979 the energy investment totalled 4.28 joule per mu of cultivated land and we harvested an average per-mu grain yield of 570 jin. In 1979 energy conversion efficiency (the ratio of output energy to input energy) was 1.96, up more than 100 percent over 1952.

Based on 1978 to 1980 county statistical data we calculated average grain output for high-, moderate-, and low-yield land in different regions. In addition, based on on 1980 county statistical data we correspondingly calculated fertilizer consumption per mu of cultivated land, the proportion of cultivated land under effective irrigation, farm machine power per 10,000 mu of cultivated land, and rural electrical consumption. The disparities in material inputs on high-, moderate-, and low-yield land are obvious. Looking at average national values, fertilizer consumption per mu of cultivated land measures 116.8 jin on high-yield land, 75.8 jin on moderate-yield land, and 51.6 jin on low-yield land; the proportion of cultivated land under effective irrigation is 19.8 percent on high-yield land, 14.9 percent on moderate-yield land, and 11.5 percent on low-yield land; farm machine horsepower available per 10,000 mu of cultivated land measures 1,827 HP on high-yield land, 1,375 HP on moderate-yield land, and 874 HP on low-yield land; and rural electricity consumption per mu of cultivated land totals 32.4 kwh on high-yield land, 20.1 kwh on moderate-yield land, and 12.9 kwh on low-yield land (see Table 17).

Table 17. State of Material Inputs on High-, Moderate-, and Low-yield Land

Regional Yield breakdown	Cultivated area and composition (million mu; %)	Grain yield per mu of cultivated land (jin)	Fertilizer use per mu of cultivated land (jin)	% of cultivated land under effective irrigation (%)	Machine power per 10,000 mu cultivated land (HP)	Electricity use per mu of cultivated land (kwh)
Northeast	248.949	345	42.2	13.0	899	19.3
high	31.9	437	60.8	7.7	1,217	32.6
moderate	22.8	372	40.7	3.2	942	22.9
low	45.3	225	25.1	2.1	701	9.4
North China	387.398	503	91.8	56.7	1,848	28.3
high	35.5	776	117.0	26.1	2,379	36.2
moderate	35.3	458	89.0	19.3	1,721	25.1
low	29.2	250	69.0	11.3	1,358	22.5
Northwest	262.723	286	12.0	29.2	610	7.2
high	23.8	441	21.1	13.2	1,187	13.1
moderate	35.5	306	10.2	10.5	570	5.6
low	40.7	178	8.2	5.5	308	3.3
Middle & Lower Chang Jiang	314.421	950	128.1	67.5	1,824	31.2
high	39.8	1,232	189.1	28.2	2,108	43.0
moderate	40.5	866	119.7	22.1	1,911	26.4
low	19.7	553	75.5	17.2	1,070	17.1
Southwest	170.181	596	79.5	38.7	911	12.8
high	25.5	959	117.4	14.5	1,201	17.7
moderate	31.1	666	73.5	13.8	905	13.8
low	43.3	333	47.6	10.4	744	9.2
South China	106.870	828	133.4	62.1	1,650	22.7
high	31.8	1,214	194.6	29.7	1,879	30.9
moderate	26.0	904	121.5	18.1	1,701	22.3
low	42.2	490	84.1	14.3	1,446	16.9

National average	1,489.578	567.0	81.2	46.2	1,346	21.5
high	31.3	850.4	116.6	19.8	1,827	32.4
moderate	31.9	571.8	75.8	14.9	1,375	20.1
low	36.8	297.0	51.6	11.5	874	12.9

All our experiences verify that natural conditions and production conditions are both deficient on low-yield land, so we must take major steps before we can achieve results. These include increasing a large number of material and energy inputs and improving fundamental production conditions. In moderate-yield regions, because they already possess a moderate productivity level, we need only provide suitable supplemental material and energy inputs to make it easier to obtain results. On high-yield land, on the other hand, because production conditions are already at a high level, the most important thing is to augment technological reforms, concentrate operations, and provide reasonable inputs; only then can we obtain stable high yields and improve economic results. In view of this situation, the direction of investment in the current phase should be focused on supporting moderate-yield regions to enable them to achieve their production potential rapidly. In low-yield regions we should transform the land as we use it and do a good job on early-stage work in order to develop and create favorable conditions. In high-yield regions we must "stabilize moderate yields and strive for high yields," further improve production conditions, and make new scientific and technological breakthroughs.

B. Rely on Scientific and Technological Progress and Transform Scientific and Technological Achievements into Productive Forces As Quickly As Possible

Relying on scientific and technological progress and accelerating technological transformation are our major means of realizing projected growth targets for each crop. For a rather long time to come the foci of scientific and technological work in the planting industry will be as follows: 1) We must integrate the superior traditional techniques of China's inherent intensive cultivation closely with modern biological science and technology. 2) We must vigorously expand existing scientific and technological achievements and constantly improve the output, quality, and commercial productivity of the major agricultural and sideline products. 3) We must import certain advanced foreign science and technology to be digested, transformed, absorbed, and utilized in the light of China's actual conditions. 4) We must adopt technical avenues featuring high yield, stable output, high quality, energy savings, and high efficiency, and we must accelerate the pace of technological transformation.

Now we must energetically disseminate and apply the following scientific and technological achievements:

1. Comprehensive cultivation techniques utilized in various regions to produce high, stable yields: This includes, for example, comprehensive drought, waterlogging, and alkali control techniques used in the Huang He-Huai He-Hai He region; waterlogging prevention and floodwater control cultivation techniques used on the middle and lower reaches of the Chang Jiang; the technique of constructing fertilizer mounds to increase yields in the dry

fields of the Loess Plateau region; comprehensive techniques to defend against low temperatures and cold damage in the northeastern region; and comprehensive techniques used to develop and utilize land in the red and yellow hill regions. If we conscientiously disseminate these measures during the Seventh 5-Year Plan we can increase yields by 10 percent or more on every mu of land. If we disseminate them over 1.0 billion mu of land it is projected that we can increase grain output 50.0 billion jin, cotton output 5.00 million dan, fruit output 1.0 billion jin, and tea output 400 million jin.

2. Fine crop varieties and cross combinations: During the Seventh 5-Year Plan more than 50 percent of all counties will establish and perfect systems to breed improved strains, and various improved crop varieties or cross combinations will be disseminated as suitable based on local conditions. The major crop varieties commonly should be replaced once. Figured based on a 10 percent increase in yield, we estimate that we can raise grain production about 30.0 billion jin and cotton production 5.00 million-plus dan. If we disseminate primarily small and medium seed-processing machinery and operating techniques we can improve seed quality and raise output approximately 5 to 10 percent. Carefully chosen seed and precision seed drilling can save approximately 4.0 to 5.0 billion jin of seed. In the next 10 years we must work from this foundation to ensure that the remaining 50 percent of all counties establish and perfect systems to breed improved strains and universally replace varieties once. If we do so it is estimated we can increase production about 10 percent.

3. Scientific fertilizer application techniques: According to pooled results of a soil survey conducted on 670 million mu of cultivated land in 901 counties throughout the 28 provinces, municipalities, and autonomous regions, Chinese soil is low in organic matter content and nutrients are out of balance. On 180 million mu of land the organic matter content is below 0.6 percent, on 1.16 billion mu phosphorous is deficient, on 410 million mu potassium is deficient, and on 200 million mu both phosphorous and potassium are lacking. If we popularize fertilizer application techniques suited to particular soils and particular crops; apply a reasonable ratio of nitrogen, phosphorous, and potassium; and adopt deep application and hole application techniques, we can distinctly improve results from fertilizer application. Based on partial statistics taken from some counties in 11 provinces and autonomous regions, if we both readjust the amount of fertilizer we use and apply a little bit of lime (in southern paddy fields) we can save about 89.00 million yuan of capital and vastly improve economic results.

4. Irrigation techniques that economize on water and improve output: Adopting field conveyance systems and seepage prevention in irrigation ditches improves the irrigation water utilization ratio by 10 percent, so we can correspondingly expand the irrigated area by 10 percent or more. Sprinkling irrigation uses approximately 30 to 50 percent of the water used by check irrigation and saves 6 to 7 percent on land used for irrigation ditches. If we expand sprinkling irrigation during the Seventh 5-Year Plan to 100 million mu, figuring a per-mu yield increase of 100 jin we can increase output 10.0 billion jin. Popularizing techniques to prevent soil damage from waterlogging and forestall soil salinization could raise yields by 20 percent or so.

5. Techniques to increase yields in dry farm cultivation: Every place has had a great deal of experience in increasing dry-farm yields. Based on a typical survey, adopting advanced dry-farm cultivation methods can produce 0.8 to 1.3 jin of grain per mu for every millimeter of precipitation. Extrapolating from this, in a locale with an annual precipitation of 300 mm the per-mu yield can be raised from the current 100-plus jin to 240 to 390 jin; where annual precipitation measures 400 mm the per-mu yield can be raised from the current 200-plus jin to 320 to 520 jin. It is estimated that China has approximately 300 million mu of cultivated land in arid and semi-arid regions. If only we conscientiously analyze our experiences and integrate traditional experience with modern science and technology, dry field crop outputs can double and redouble. If we increase yield 100 jin per mu of cultivated land we can raise production by 30.0 billion jin.

6. Comprehensive blight, insect, weed, and rodent control techniques: During the Seventh 5-Year Plan we will adopt comprehensive control measures to reduce grain losses to 3 to 5 percent, cotton losses to 5 to 8 percent, and fruit and

vegetable losses to less than 10 percent. This could redeem economic losses of about 5.0 billion yuan per year.

7. Techniques to improve low-yield land: By transforming 50 million mu of low-yield land during the Seventh 5-Year Plan and increasing the grain yield thereon by 200 jin per mu, we can increase total output 10.0 billion jin. By transforming 2.50 million mu of low-yield tea plantations and raising their per-mu yield of 30 or 40 jin up to about 150 jin, we can raise tea production a total 2.50 million dan. By transforming 1.00 million mu of low-yield rubber plantations and raising their per-mu yield of 30 or 40 kg up to 70 or 80 kg, we can increase dry rubber output 40,000 to 50,000 tons. By transforming 1.00 million mu of low-yield fruit orchards and replacing 1.00 million mu of mulberry fields we will tap further potential for yield increases in existing fruit orchards and mulberry fields. Fruit and natural silk production can be increased by a large margin and quality can also be notably improved.

8. Protective cultivation techniques: These include various sorts of crop mulches; nylon used in paddy, cotton, and peanut breeding; and plastic awnings for vegetable cultivation. By using these techniques it is estimated we can boost yields 20 percent or so. If we strive to disseminate these methods over approximately 100 million mu of land during the Seventh 5-Year Plan, we can increase economic results significantly.

9. Mechanized energy-saving cultivation techniques: In plowing and soil preparation, by adopting multiple operations and minimal plowing techniques we can save 20 jin of oil and reduce operating expenses 1.5 yuan per mu. If we extend these methods over 5.00 million mu of land during the Seventh 5-Year Plan we can save 5,000 tons of oil and 7.50 million yuan worth of operating expenses, and we can decrease the machinery investments by 20.00 million yuan. If we institute precision seed drilling for various crops it is estimated we can save an average 10 jin of seed per mu. Extended over 50.00 million mu this may save 500 million jin of seed and 1.00 million mu of controlled planting.

10. Various forms of comprehensive multiple cropping techniques: During the Seventh 5-Year Plan, in regions where natural conditions permit, labor power is abundant, and production conditions are relatively advantageous, we will, popularize various forms of multiple cropping systems suited to local conditions. For example, in the south we will popularize a triple cropping system focused on double-crop rice or on rice, corn, and wheat. In the north we will popularize double cropping of rice and wheat, corn and wheat, or corn and cotton. This will make the best use of sunlight, heat, and water resources and promote increased crop yields throughout the year. If we can extend multiple cropping over 50 to 100 million mu, figuring an increase of 100 jin per mu we can raise grain production 5.0 to 10.0 billion jin.

Although when the above ten techniques are actually applied in different regions there may be major discrepancies in results and potential yield increases, so long as we adopt measures that are suited to local conditions and pay attention to coordination and complementarity among the various techiniques, striking increases in output are possible.

C. Adopt Policies Advantageous to Agricultural Development

First, we must stabilize and perfect the output-related system of contracted household responsibility and work out a national program for agricultural development that is capable of exercising a role over a fairly long period of time. To help agricultural development we must formulate and perfect various agricultural rules and regulations, including land laws, forest laws, prairie laws, fishery laws, environmental protection laws, and so forth, as well as agricultural resource protection policies, grain and cash crop development policies, fodder development policies, rural energy policies, technical policies, agricultural intellectual investment policies, and policies dictating top prices for high-quality agricultural products.

Second, we must make further price adjustments on agricultural products and maintain equitable price parities between various farm and sideline products. We must readjust the state grain procurement base and price parities between grain crops and cash crops, reduce or eliminate state monopoly procurement bases for grain and cotton, and put into effect policies whereby contract procurement prices and market purchase prices are calculated based on stipulated proportions. At the same time, we must open up circulation channels and permit farmers to market freely or handle on their own any primary, secondary, or tertiary goods left after centrally assigned procurement responsibilities are met. We must establish a set of reasonable pricing systems and policies in order to guarantee stable growth in grain and cash crops.

Third, we must open up agricultural energy resources: in addition to opening up many channels of rural energy resources--developing fuel forests, small hydroelectric plants, methane, solar energy, and wind energy--and actively promoting various energy-saving measures, we must also consider rural production and domestic energy needs within the national energy program and ensure that there is a certain proportion of supplies.

Fourth, we must settle agricultural development funding. In the wake of advances in agricultural modernization, the proportion of funding taken up by production, as measured by per-unit output value, should be correspondingly increased. In ordinary circumstances, calculating the ratio of agricultural output value to the increment in fixed assets at 1:1.6, by the end of the century the total production investment needed in agriculture, forestry, animal husbandry, sidelines, and fishery will be approximately 1,010.0 billion yuan and the total investment needed in rural industry will be 411.7 billion yuan. The two together add up to an investment of 1,421.7 billion yuan. Of material inputs in agriculture, the cost (the state's share) for three production conditions alone--irrigation, chemical fertilizer, and farm machinery--is calculated as follows: for 1990 the high plan figures 46.8 billion yuan and the low plan figures 40.8 billion yuan; for 2000 the high plan figures 55.3 billion yuan and the low plan figures 48.1 billion yuan. Taken together, the high plan calls for 102.1 billion yuan and the low plan calls for 88.9 billion yuan, or 107.4 to 123.3 percent of the cumulative investment over the past 30 years (see Table 18). An estimate of the possible sources for overall agricultural funding is as follows: 1) Rural industrial funds that can be used to support agriculture; 2) State financed agricultural support funds figured at 8 percent of the total investment in capital construction; 3) Production funds that can be supplied through agricultural credit; 4) Funds raised by peasants themselves, figured at 8 percent of output value. These four sources combined can provide 1,479.0 billion yuan, in a composition described by the ratio 1.2:0.6:1.5:6.7. This will essentially meet the demand for production funds.

Table 18. Calculation of the Cost of Irrigation, Chemical Fertilizer, and Farm Machinery (in billion yuan)

Task	Cumulative investment in 30 years	1980		2000		Total invested by year 2000	
		low	high	low	high	low	high
1) Expand irrigated area 200 million mu	51.948 (1)	25.0	30.0	25.0	30.0	50.0	60.0
2) Expand chemical fertilizer, pesticide production	22.115 (2)	13.3	13.3	18.6	18.6	31.9	31.9
3) Add to and replace farm machinery (3)	8.731	2.5	3.5	4.5	6.7	7.0	10.2
Total	82.749	40.8	46.8	48.1	55.3	88.9	102.1

Notes:
(1) Cumulative investment in water conservancy 1952 to 1980.
(2) Cumulative investment in chemical fertilizer and pesticides 1952 to 1980.
(3) Future replacement of 10.00 million HP/yr, at a cost of 15 yuan/HP; annual addition of 12.00 million HP.

IV. A Regional Location Study

We have conducted a location study on China based on a division into six major natural and administrative regions: the Northeast Region (including Liaoning, Jilin, and Heilongjiang), the North China Region (including Shanxi, Hebei, Shandong, Henan, Shaanxi, Beijing, and Tianjin), the Middle and Lower Chang Jiang Region (including Hunan, Hubei, Jiangxi, Anhui, Jiangsu, Zhejiang, and Shanghai), the Southwest Region (including Yunnan, Guizhou, Sichuan, and the Xizang Autonomous Region), the South China Region (including Fujian, Guangdong, and the Guangxi Zhuang Autonomous Region), and the Northwest Region (including the Nei Mongol Autonomous Region, the Ningxia Hui Autonomous Region, Gansu, Qinghai, and the Xinjiang Uygur Autonomous Region). Here we will summarize the results of our regional calculations.

A. A Projection of Regional Demand Trends

China encompasses a vast territory, and because of differences in natural conditions and ethnic composition, as well as many years of unbalanced political, economic, and cultural development, differences in demand have formed between the various nationalities and regions.

Based on an analysis of the present situation and regional characteristics, we project that by the year 2000 quantities of food and clothing in these 6 regions will both be higher than their current base level. Dietary and clothing compositions will be considerably improved and nutritional levels and clothing standards will be significantly higher. However, because production development and economic income levels are still unbalanced between the various regions, there are still significant disparities between people's daily consumption levels. From the perspective of purchasing power, in the Middle and Lower Chang Jiang Region, the South China Region, and the Northeast Region it is fairly high, exceeding purchasing power in the other three regions by 30 percent or more; thus consumption levels there are rather high.

In animal foods, for example, by the year 2000 the average per capita consumption of meat, milk, eggs, and fish will be highest in the South China Region and the Middle and Lower Chang Jiang Region, measuring 145 jin and 131 jin, respectively; moderate in the Northeast Region, measuring 96 jin; and lowest in the North China, Northwest, and Southwest Regions, where it will measure 67 jin, 55 jin, and 68 jin, respectively. A certain disparity persists in grain, vegetable oil, sugar, vegetable, and fruit consumption as well (see Table 19). As for apparel, in addition to maintaining different characteristics of custom and habit, from the perspective of increasing consumption the situation is similar to that for food: there are significant disparities between regions. Cotton consumption is highest in the Northeast Region, measuring 25.2 chi per capita, followed by the Middle and Lower Chang Jiang Region and the Northwest Region, measuring 18 chi and 18.2 chi per capita respectively. Cotton consumption in the other three regions is quite low (see Table 20). In addition to these, we have also calculated non-ration grain use and total social demand for major agricultural products (see Tables 21 and 22). In order to attain the degree of improvement discussed above we must also carry out the necessary inter-regional adjustments on major agricultural surpluses and defecits, enhance inter-regional allocation and transport, and correspondingly improve storage and processing. Only then can we promptly meet each region's multifarious demands for agricultural goods.

B. Projected Regional Production Trends

Because of regional differences in socioeconomic conditions and natural conditions, obvious disparities in grain and cash crop production development characteristics and trends emerge between different types of regions.

1. Grain Production Development Trends (see Table 23)

First, the disparities in yield per unit of area between different types of areas will shrink somewhat. Grain output is currently highest in the Middle and Lower Chang Jiang Region, but because the multiple crop index and production base are high, in the future the rate of increase in unit yield will be comparatively slow. In the three northern regions and the Southwest region, because the multiple crop index and the production base are rather low, future increases may be relatively rapid. Comparing the south with the north, right now the per-mu yield in the Middle and Lower Chang Jiang Region is 1.66 times that in the North China Region and 2.66 times that in the Northwest Region, but by the year 2000 this disparity will shrink to factors of 1.27 and 1.98, respectively. Comparing east and west, right now the per-mu yield in the Middle and Lower Chang Jiang Region is 1.32 times that in the

Southwest Region, but this will decline to a factor of 1.02, or basically even.

Second, after grain output and demand in the various regions is balanced we can be essentially self-sufficient, but there will still be a 20.0 billion jin difference between grain transferred in and out. The Northeast Region can provide 7.5 to 12.0 billion jin of commodity grain to the outside, the North China Region can supply nearly 6.0 billion jin, and the Middle and Lower Chang Jiang Region can supply 4.0 billion jin. By contrast, the South China Region and the Northwest Region will need to transfer in at least 3.4 billion and 2.4 billion jin of commodity grain, respectively. After this is balanced there will still be 11.5 to 16.0 billion jin of grain that can be provided for export.

Table 19. China's Regional Dietary Composition and Nutritional Level (heat in kcals; protein in grams)

		Food heat energy & protein content; proportion derived from animal foods					
Region	Year	Total		Animal foods-heat		Animal foods-protein	
		Heat	Protein	Quantity	% of total	Quantity	% of total
Northeast	Current	2,559	74.3	238.0	9.3	5.94	8.0
	1990	2,664	81.6	247.1	9.3	9.8	12.0
	2000	2,666	84.8	467.9	17.6	16.9	19.9
North China	Current	2,258	54.56	102	4.5	1.9	3.6
	1990	2,563	73	241	9.4	6.6	9.0
	2000	2,681	78	442	16.5	14	16
Northwest	Current	2,090	46.3	171	8.2	5.14	10.66
	1990	2,481	65.4	265	10.1	8	12.23
	2000	2,505	65	338	13.5	10.8	16.61
Middle & Lower Chang Jiang	Current	2,359	53.8	224.4	9.5	4.92	9.14
	1990	2,511	56	342.8	13.6	8.29	14.8
	2000	3,031	69	554.0	18.3	17.94	26
South China	Current	2,321	56.4	209	9	9.6	17.1
	1990	2,320	63.25	319	11.6	15	23.7
	2000	2,430	71.25	421	17.4	27.2	33.9
Southwest	Current	2,432.12	67.60	274.06	11.27	4.87	7.17
	1990	2,536.05	66.16	332.05	13.09	6.59	9.96
	2000	2,685.22	64.05	437.42	16.29	9.37	14.63

Average annual per capita dietary composition (in jin)											
Total grain (unprocessed)	Including			Meat	Milk	Eggs	Fish	Veg. oil	Sugar	Vegetables	Fruit
	Cereal	Legumes	Potatoes								
495	467	28	70	25.2	6.0	7.4	6.7	7.6	7.0	350	15.7
516	484	32	70	32.2	20.0	12.0	14.0	9.9	12.0	350	17.5
468	426	42	72	52.5	45.0	25.0	18.0	13.0	12.0	350	30.0
	416			10.5	0.5	2.6	0.97	3.7	1.34		
520	490	20	50	18	5	5	2	5	2	292	5
484	455	25	20	40	13	12	3	10	8	365	15

456				24.34	9.83	3.09	1.61	7.13	3.12	168	10.4
510	497	9.0	19	32.4	33	5.7	3.9	8.4	7.31	183	18
473	463	7.4	15	40	52	9.4	5.4	11.9	12.1	241	12.3
540	530	5	5	27	5.9	7.2	7.5	6.0	3.36	273.4	3.58
507	494	8	5	42	22	12	20	10	7	340	25
507	494	8	5	67	44	24	40	12	14	304	45
521				30	0.8	3	18.6	4.6	10	262	11.5
490	457	19.5	67.5	47	9	11	35	8	16.5	275	22.5
450	419	22.5	45	80.5	27.9	19	4.5	12	23.5	265	32.5
492	387.4	9.0	95.1	33.4	1.05	3.31	1.39	3.30	3.48	240	6.95
490	406.3	12.0	71.7	41.54	5.00	4.50	3.00	6.00	6.00	272	12
489	427.5	14.0	47.5	55.3	8.00	7.00	6.00	11.00	12.00	256	25

Note: Figures for Northwestern grain consumption do not include pastries; Northeastern potatoes are primarily white potatoes, and are not included in grain calculations.

Table 20. Current and Projected Regional Individual Clothing Consumption and Total Domestic Cotton Use

		Item					
		Cotton cloth		Synthetic cloth		Cotton wadding	Total domestic cotton use
Region	Date	Consumption (chi)	Cotton equivalent (jin)	Consumption (chi)	Cotton equivalent (jin)	(jin)	(jin)
Northeast	Current	18.5	1.85	6.8	0.27	0.87	3.5
	1990	16.8	1.68	10.2	0.41	1.5	4.1
	2000	16.1	1.61	16.7	0.67	1.8	4.7
North China	Current	13.5	1.35	4.5	0.18	1	8
	1990	16	1.6	15	0.6	1	4.4
	2000	10	1	20	0.8	0.5	4.6
Northwest	Current	13.9	1.4	4.83	0.19	1.07	3.1
	1990	18.7	1.87	15.7	0.6	1.15	5.1
	2000	18.2	1.82	20.3	0.81	1.25	6.0
Middle & Lower Chang Jiang	Current	11.98	1.2	14.02	0.56	0.6	5.84
	1990	20.64	2.1	14.41	0.58	1	7.98
	2000	18	1.8	15	0.6	1	8.56
South China	Current	10	1.0	4	0.16	0.3	2.76
	1990	13.5	1.4	9.5	0.38	0.4	3.78

	2000	16	1.6	16	0.64	0.3	4.27
Southwest	Current	10.87	1.09	3.05	0.12	0.3	2.5
	1980	11.1	1.1	4.9	0.2	0.4	3.0
	2000	11	1.1	7.9	0.32	0.6	3.6

Table 21. Regional Non-ration Grain Use in 1990 and 2000 (in billion jin)

1990

	Seed		Fodder		Industry		New reserves		Spoilage		Total	
Plan	I	II	I	II	I	II	I	II	I	II	I	II
Region												
Northeast	4.0	4.0	14.7	20.6	1.5	1.5	0.1	0.1	2.6	2.8	22.9	29.0
North China	10.1	10.1	33.7	44.9	12.5	13.4	1.5	1.5	2.1	2.2	55.8	72.1
Northwest	3.6	4.02	10.6	11.0	.256	.283	.051	.051	1.18	1.31	15.7	16.7
Middle & Lower Chang Jiang	15.2	61.2	67.7	68.7	17.0	18.0	.3	.3	8.3	8.3	108.5	111.5
South China	3.6	3.7	30.9	34.8	1.96	2.9	.14	.15	.9	.95	37.5	42.5
Southwest	6.42	6.42	25.89	25.89	4.46	4.46	6.53	11.73	1.82	1.82	45.11	50.31

2000

	Seed		Fodder		Industry		New reserves		Spoilage		Total	
Plan	I	II	I	II	I	II	I	II	I	II	I	II
Region												
Northeast	4.3	4.3	27.3	35.9	3.0	3.0	.08	.07	3.4	3.6	38.1	46.9
North China	9.8	9.9	54.8	78.7	23.1	24.7	1.45	1.45	2.5	2.7	91.65	117.45
Northwest	3.6	4.08	13.23	14.53	.33	.37	.052	.052	1.5	1.7	18.7	20.7
Middle & Lower Chang Jiang	14.5	15.5	92.8	93.8	26.2	27.2	.28	.28	8.0	8.0	141.8	144.8
South China	3.6	3.8	49.4	56.6	2.86	3.7	.14	.15	1.0	1.15	57.0	65.4
Southwest	6.26	62.6*	40.63	40.63	6.32	6.32	14.78	17.18	2.13	2.13	70.12	72.52

Note: Figures for Northeast industrial grain use do not include grain used in food products.
*[Figure as published]

Table 22. Regional Social Demand for Major Agricultural Products (grain, oil crops, sugar crops, vegetables, and fruit measured in billion jin; cotton measured in million dan)

			Grain		Crop Cotton		Oil Crops	
Region	Date	Plan	Total	Domestic consumption	Total	Domestic consumption	Total	Domestic consumption
Northeast	1990	I	84.90	53.20	4.05	4.05	.86	.86
		II	88.40	49.90	4.05	4.05	1.43	1.43
	2000	I	105.50	55.40	4.71	4.71	1.88	1.88
		II	110.7	50.30	4.71	4.71	2.20	2.20
North China	1990	I	220.7	155.6	43.14	14.53	6.5	5.3
		II	220.7	143.4	48.95	12.29	7.5	6.4
	2000	I	262.2	163.2	44.00	15.62	9.6	8.4
		II	274.4	149.8	49.80	15.76	11.0	10.2
Middle and Lower Chang Jiang	1990	I	272.7	164.2	28.40	1.29	6.755	
		II	275.7	164.2	33.74	1.62	11.00	9.6
	2000	I	317.6	175.8	35.91	1.74	16.00	12.6
		II	320.6	175.8				
Southwest	1990	I	113.72	88.30		5.31		3.59
		II	133.72	88.30		5.31		3.59
	2000	I	149.52	96.37		7.18		7.39
		II	149.52	96.37		7.18		7.39
South China	1990	I	102.9	65.4	3.30	2.99	2.48	2.4
		II	111.1	68.6	3.54	2.99	3.17	3.06
	2000	I	122.9	66.4	4.14	3.89	4.35	4.21
		II	135.3	70.4	4.84	3.89	5.08	4.91
Northwest	1990	I	48.7	33.0	5.94	3.32	2.1	1.94
		II	51.7	35.0	6.34	3.32	2.27	2.06
	2000	I	52.3	33.6	7.45	4.27	2.9	2.6
		II	58.8	38.1	8.44	4.84	3.3	3.0

(Table 22 continued)

Region	Date	Plan	Crop					
			Sugar crops		Fruit		Vegetables	
			Total	Domestic consumption	Total	Domestic consumption	Total	Domestic consumption
Northeast	1990	I	9.23	9.23	1.5	1.5	35.0	35.0
		II	9.23	9.23	2.0	2.0	35.0	35.0
	2000	I	10.43	10.43	2.8	2.8	39.6	30.6
		II	10.43	10.43	2.96	2.96	39.59	39.59
North China	1990	I	1.32	1.15		2.31	84.8	84.8
		II	1.65	1.72		2.85	102.0	102.0
	2000	I	2.4	2.55		4.8	114.8	114.8
		II	2.7	3.85		6.4	119.5	119.5
Middle and Lower Chang Jiang	1990	I	16.2	8.1				
		II	37.6	17.7	8.9	8.1		97.2
	2000	I	75.2	35.0	17.2	15.6		105.4
		II						
Southwest	1990	I		13.39		2.14		60.66
		II		13.39		2.14		60.66
	2000	I		30.797		4.94		63.18
		II		30.797		4.94		63.18
South China	1990	I	19.6	19.6	2.74	2.74	37.04	37.08
		II	23.3	23.3	3.4	3.4	38.11	38.11
	2000	I	30.6	30.6	4.59	4.59	39.78	39.77
		II	34.3	34.3	5.29	5.29	40.77	40.77
Northwest	1990	I	3.56	3.4	1.519	1.215	12.36	12.36
		II	3.78	3.6	1.544	1.235	12.56	12.56
	2000	I	6.02	5.73	2.672	2.138	18.83	18.87
		II	6.82	6.5	2.748	2.210	19.41	19.41

Note: Total refers to the combination of domestic consumption and other social consumption. Domestic grain consumption refers to ration grain. Domestic grain consumption for the Northeast Region includes ration grain and grain used in food products.

Table 23. Regional Grain Development Plans*

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		Grain Crops					
		Plan 1			Plan 2		
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
	Current	207.00	319	66.0			
Northeast	1990	211.06	407	85.9	211.06	422	89.1
	2000	234.00	478	112.0	234.00	505	118.3
	Current	479.15	351	168.0			
North China	1990	500.60	421	215.1	500.60	441	223.0
	2000	495.00	518	256.6	490.00	560	273.4
	Current	146.98	220	32.4			
Northwest	1990	150.00	262	39.3	167.50	260	43.6
	2000	150.00	333	50.0	170.00	331	56.3
Middle &	Current	460.59	585	269.7			
Lower	1990	459.92	599	275.4	455.94	621	283.0
Chang Jiang	2000	468.72	660	309.4	468.72	687	322.2
	Current	165.65	500	82.9			
South China	1990	159.78	597	95.3	165.70	577	95.6
	2000	166.40	670	111.5	171.40	700	120.0
	Current	242.07	445	107.6			
Southwest	1990	249.53	522	130.2	248.30	546	135.6
	2000	253.57	646	163.9	250.40	664	166.3
	Current	1,700.94	416	706.9			
National	1990	1,730.74	486	841.2	1,749.10	497	869.8
	2000	1,768.09	568	1,003.4	1,784.52	592	1,056.5

		Rice					
		Plan 1			Plan 2		
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
	Current	13.58	691	9.4			
Northeast	1990	19.25	734	14.1	19.25	750	14.4
	2000	20.30	830	16.9	20.30	850	17.3
	Current	12.83	656	8.4			
North China	1990	17.68	720	12.7	17.68	730	12.9
	2000	19.80	780	15.4	19.60	850	16.7
	Current	2.47	632	1.6			
Northwest	1990	2.50	680	1.7	2.50	680	1.7
	2000	2.50	700	1.8	2.50	700	1.8
Middle &	Current	266.06	680	181.0			
Lower	1990	266.00	760	197.6	256.22	780	199.9
Chang Jiang	2000	269.00	800	215.2	269.00	820	220.6
	Current	125.86	578	72.7			
South China	1990	121.43	680	82.6	125.93	660	83.1
	2000	128.13	760	97.4	131.99	780	103.0
	Current	75.15	688	51.7			
Southwest	1990	76.88	765	58.8	76.91	790	60.7
	2000	80.88	878	71.0	81.21	893	72.4

	2000	6.66	400	2.7	6.86	420	2.9
	Current	52.26	415	21.7			
Southwest	1990	54.03	531	28.7	54.13	546	29.6
	2000	54.57	683	37.3	54.57	688	37.5
	Current						
National	1990						
	2000						

(Table 23 continued)

Potatoes

			Plan 1			Plan 2	
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
	Current	5.40	276	1.5			
Northeast	1990	4.50	340	1.5	4.50	380	1.7
	2000	5.00	420	2.1	5.00	450	2.3
	Current	43.55	436	19.0			
North China	1990	47.50	480	22.8	47.50	400	23.8
	2000	34.60	590	20.4	31.90	650	20.7
	Current	8.58	179	1.5			
Northwest	1990	8.00	220	1.8	8.50	220	1.9
	2000	8.00	240	1.9	8.50	240	2.0
Middle &	Current	29.56	450	13.3			
Lower	1990	25.00	490	12.3	25.00	520	13.0
Chang Jiang	2000	25.00	650	16.3	25.00	700	17.5
	Current	16.37	330	5.4			
South China	1990	16.57	400	6.6	15.98	420	6.7
	2000	18.30	500	9.2	18.86	520	9.8
	Current	35.48	347	12.3			
Southwest	1990	35.00	438	15.3	34.50	472	16.3
	2000	32.81	634	20.8	32.31	650	21.0
	Current						
National	1990						
	2000						

Millet

			Plan 1			Plan 2	
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
	Current	21.21	173	3.7			
Northeast	1990	22.50	237	5.3	22.50	250	5.6
	2000	24.70	300	7.4	24.70	350	8.7
	Current	28.35	276	7.8			
North China	1990	29.30	330	9.7	29.30	330	9.7
	2000	31.00	360	11.2	32.80	400	13.1
	Current	10.54	150	1.6			
Northwest	1990	8.00	160	1.3	8.00	160	1.3
	2000	8.00	180	1.4	8.00	180	1.4
Middle &	Current	.23	201	.05			
Lower	1990	.18	220	.04	.18	210	.04

National	Current	495.84	650	322.5			
	1990	497.74	738	367.5	468.83	795	372.7
	2000	520.61	802	417.7	524.60	823	431.5

(Table 23 continued)

Wheat

			Plan 1			Plan 2	
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
Northeast	Current	30.58	195	6.0			
	1990	33.60	290	9.7	33.60	300	10.1
	2000	41.20	400	16.5	41.20	420	17.3
North China	Current	188.84	337	63.7			
	1990	200.00	400	80.0	200.00	410	82.0
	2000	212.80	470	100.0	210.70	500	105.4
Northwest	Current	62.67	253	15.9			
	1990	70.00	270	18.9	75.00	270	20.3
	2000	70.00	350	24.5	78.00	350	27.3
Middle & Lower Chang Jiang	Current	88.30	396	35.0			
	1990	91.20	430	39.2	91.20	450	41.0
	2000	91.20	510	46.5	91.20	540	49.2
South China	Current	3.50	240	.8			
	1990	3.31	300	1.0	3.20	320	1.0
	2000	3.33	360	1.2	3.43	380	1.4
Southwest	Current	45.40	328	14.9			
	1990	47.70	387	18.4	46.70	411	19.2
	2000	50.30	487	24.5	48.50	499	24.2
National	Current						
	1990						
	2000						

Corn

			Plan 1			Plan 2	
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
Northeast	Current	61.87	477	29.5			
	1990	59.70	570	34.0	59.70	590	35.2
	2000	60.00	670	40.2	60.00	700	42.0
North China	Current	117.00	456	53.4			
	1990	127.30	570	72.6	127.30	600	76.4
	2000	126.00	700	88.2	125.00	750	93.8
Northwest	Current	19.10	309	5.9			
	1990	18.00	420	7.6	20.00	420	8.4
	2000	18.00	530	9.5	20.00	530	10.6
Middle & Lower Chang Jiang	Current	8.84	292	2.6			
	1990	22.80	480	10.9	22.80	500	11.4
	2000	22.80	570	13.0	22.80	600	13.7
South China	Current	8.84	292	2.6			
	1990	8.28	350	2.9	7.99	380	3.0

Chang Jiang	2000	.18	250	.05	.18	270	.05
South China	Current						
	1990						
	2000						
Southwest	Current						
	1990						
	2000						
National	Current						
	1990						
	2000						

(Table 23 continued)

Sorghum

Region	Date	Plan 1 Area	Plan 1 Per-mu yield	Plan 1 Gross output	Plan 2 Area	Plan 2 Per-mu yield	Plan 2 Gross output
Northeast	Current	18.73	366	6.9			
	1990	18.50	533	9.9	18.50	550	10.2
	2000	19.00	630	12.0	19.00	650	12.4
North China	Current	14.93	268	4.0			
	1990	15.15	310	4.7	15.15	330	5.0
	2000	13.80	400	5.5	13.72	500	6.9
Northwest	Current	4.41	231	1.0			
	1990	3.50	290	1.0	3.50	290	1.0
	2000	3.00	350	1.1	3.50	350	1.2
Middle & Lower Chang Jiang	Current	1.99	186	.4			
	1990	1.28	260	.3	1.28	280	.4
	2000	1.28	400	.5	1.28	420	.6
South China	Current						
	1990						
	2000						
Southwest	Current						
	1990						
	2000						
National	Current						
	1990						
	2000						

Variety grains

Region	Date	Plan 1 Area	Plan 1 Per-mu yield	Plan 1 Gross output	Plan 2 Area	Plan 2 Per-mu yield	Plan 2 Gross output
Northeast	Current	7.78	176	1.4			
	1990	6.31	230	1.5	6.31	250	1.6
	2000	6.80	300	2.0	6.80	350	2.4
North China	Current	31.70	173	5.5			
	1990	26.80	250	6.7	26.80	250	6.7
	2000	18.60	350	6.5	20.00	330	6.6
Northwest	Current	34.51	122	4.2			
	1990	35.00	180	6.3	45.00	180	8.1

	2000	35.00	250	8.8	45.00	250	11.3
Middle & Lower Chang Jiang	Current	31.07	342	10.6			
	1990	31.90	350	10.2	31.90	370	11.8
	2000	31.90	370	11.8	31.90	400	12.8
South China	Current	3.43	122	.4			
	1990	4.14	200	.8	3.99	210	.8
	2000	3.42	250	.9	3.33	270	.9
Southwest	Current	28.58	214	6.1			
	1990	29.41	258	7.6	29.05	280	8.1
	2000	26.80	303	8.1	25.30	346	8.8
National	Current						
	1990						
	2000						

(Table 23 continued)

		Soybeans					
		Plan 1			Plan 2		
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
Northeast	Current	47.71	164	7.8			
	1990	46.70	210	9.8	46.70	220	10.3
	2000	57.00	260	14.8	57.00	280	16.0
North China	Current	36.10	118	4.3			
	1990	36.87	160	5.9	36.87	180	6.6
	2000	37.00	250	9.3	37.70	300	11.3
Northwest	Current	4.62	141	.7			
	1990	5.00	155	.8	5.00	155	.8
	2000	5.00	175	.9	5.00	175	.9
Middle & Lower Chang Jiang	Current	24.93	142	3.5			
	1990	27.36	180	4.9	27.36	200	5.5
	2000	27.36	220	6.0	27.36	280	7.7
South China	Current	7.64	122	.9			
	1990	7.46	150	1.1	7.19	160	1.2
	2000	6.66	180	1.3	6.84	180	1.2
Southwest	Current	5.21	171	.9			
	1990	6.51	208	1.4	7.01	250	1.8
	2000	8.21	265	2.2	8.71	282	2.5
National	Current						
	1990						
	2000						

*[Source does not specify units of measurement. From previous tables they are assumed to be 10,000 mu, jin, and 100 million jin, converted here to million mu, jin, and billion jin.]

Third, a significant regional imbalance in grain varieties persists. The three northern regions have only about 50 percent as much rice and wheat as the three southern regions, whereas the south has less than 40 percent as much corn as the north. Consequently, southern regions can cut out some low-yield paddy land and convert it to soybeans or corn and other fodder crops, and the north can actively expand wheat and paddy cultivation. This will reduce the excessive quantity of grain allocated and transported between the two macro-regions. The corn surplus in the Northeast Region can be converted on the spot into livestock products or processed foods. The Northeast Region and the North China Region account for 70 percent of China's soybean production; the Northeast Region alone will be able to supply 4.0 to 6.0 billion jin of soybeans by the end of the century. On the other hand, in the three southern regions and the Northwest Region soybean growing area accounts for only 5 percent and 3 percent, respectively, of the total sown grain area. We need to transfer soybeans into these regions and also suitably expand soybean cultivation there.

2. Cash Crop Production Development Trends (see Table 24)

First, the inter-regional disparities in major cash crop yields per unit of

Table 24. Regional Cash Crop Development Plans (in million mu, jin, and million dan)

		Cash Crops	
		Plan 1	Plan 2
Region	Date	Area	Area
	Current	20.18	
Northeast	1990	33.00	33.00
	2000	39.15	39.15
	Current	94.35	
North China	1990	94.50	88.50
	2000	90.00	94.00
	Current	24.00	
Northwest	1990	33.83	24.72
	2000	38.23	29.42
Middle & Lower Chang Jiang	Current	85.91	
	1990	85.34	85.14
	2000	85.20	84.80
	Current	27.28	
South China	1990	32.28	31.12
	2000	33.00	32.00
	Current	30.18	
Southwest	1990	34.17	34.17
	2000	39.18	39.18

		Cotton					
		Plan 1			Plan 2		
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
	Current	.70	67	.47			
Northeast	1990	1.20	90	1.08	1.20	100	1.20
	2000	1.00	120	1.20	1.00	100	1.00
	Current	49.17	78	38.48			

North China	1990	43.14	100	43.14	44.50	110	48.95
	2000	41.50	120	49.80	40.00	110	44.00
	Current	4.37	69	3.02			
Northwest	1990	5.50	100	5.50	6.00	92	5.52
	2000	7.63	140	10.64	10.00	130	13.00
Middle & Lower Chang Jiang	Current	30.98	91	28.32			
	1990	27.28	118	32.19	27.43	110	31.45
	2000	27.11	130	35.30	27.36	120	32.83
	Current	.05	29	.01			
South China	1990	.044	50	.022	.045	50	.023
	2000	.03	60	.018	.03	60	.018
	Current	2.16	78	1.68			
Southwest	1990	2.41	99	2.39	2.41	99	2.17
	2000	2.61	130	3.39	2.61	122	3.17

(Table 24 continued)

Oil Crops

Region	Date	Plan 1 Area	Per-mu yield	Gross output	Plan 2 Area	Per-mu yield	Gross output
Northeast	Current	10.50	189	19.80			
	1990	16.00	190	3.04	16.00	200	32.00
	2000	16.80	240	40.32	16.82	220	36.96
North China	Current	33.17	168	55.81			
	1990	33.60	180	60.48	36.00	200	72.00
	2000	37.50	292	108.75	36.50	250	91.25
Northwest	Current	16.85	111	18.77			
	1990	18.00	167	30.00	23.08	130	30.00
	2000	17.00	194	33.00	21.85	151	33.00
Middle & Lower Chang Jiang	Current	46.56	166	77.37			
	1990	50.88	212	107.80	50.88	179	90.95
	2000	50.76	287	145.80	50.76	234	118.63
South China	Current	11.89	175	20.81			
	1990	16.50	230	38.09	17.30	230	39.66
	2000	17.00	308	52.36	18.10	280	50.76
Southwest	Current	19.06	204	39.73			
	1990	21.33	233	49.65	21.33	221	47.05
	2000	26.35	284	72.17	26.35	260	67.19

Suger Crops

Region	Date	Plan 1 Area	Per-mu yield	Gross output	Plan 2 Area	Per-mu yield	Gross output
Northeast	Current	4.78	1,670	79.85			
	1990	9.40	2,500	235.00	9.40	3,000	282.00
	2000	11.40	4,000	456.00	11.40	3,500	399.00
North China	Current	.55	2,091	11.50			
	1990	.60	2,400	14.40	.60	2,400	14.40
	2000	1.20	3,600	43.20	1.00	3,600	36.00
Northwest	Current	1.49	2,761	41.11			
	1990	2.87	3,000	86.16	3.62	2,800	101.36
	2000	3.73	4,000	149.20	5.15	3,800	195.70
Middle & Lower Chang Jiang	Current	.79	5,794	45.72			
	1990	1.29	8,000	103.20	1.29	7,700	99.33
	2000	1.14	9,650	110.00	1.14	9,650	110.00
South China	Current	7.26	7,837	568.83			
	1990	7.30	9,600	700.80	7.60	10,000	760.00
	2000	7.70	11,600	893.20	7.80	11,000	858.00
Southwest	Current	1.67	6,430	107.63			
	1990	2.90	7,173	208.09	2.90	6,900	200.17
	2000	3.12	8,115	253.26	3.12	7,800	243.44

(Table 24 continued)

		Fiber Crops					
		Plan 1			Plan 2		
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output
Northeast	Current	1.16	93	1.54			
	1990	3.40	169	5.75	3.40	176	5.98
	2000	3.00	214	6.42	3.00	199	5.97
North China	Current	1.44	351	5.03			
	1990	1.80	370	6.66	1.40	390	5.46
	2000	1.00	410	4.10	1.10	400	4.40
Northwest	Current	.11	65	.07			
	1990	.11	110	.12	.11	110	.12
	2000	.11	110	.12	.11	110	.12
Middle & Lower Chang Jiang	Current	2.40	533	12.79			
	1990	2.40	630	15.12	2.65	605	16.03
	2000	2.40	590	14.16	2.65	590	15.64
South China	Current	.58	488	2.82			
	1990	1.05	550	5.78	1.10	550	6.05
	2000	1.10	625	6.88	1.30	576	7.49
Southwest	Current	.70	366	2.54			
	1990	.38	420	1.58	.38	400	1.51
	2000	.39	500	1.94	.39	480	1.86

		Tobacco						Other crops
		Plan 1			Plan 2			
Region	Date	Area	Per-mu yield	Gross output	Area	Per-mu yield	Gross output	Area
Northeast	Current	1.12	247	2.96				17.92
	1990	1.00	297	2.97	1.00	307	3.07	
	2000	1.00	317	3.10	1.00	297	2.97	
North China	Current	6.06	303	18.39				27.82
	1990	4.00	310	12.40	4.00	310	12.40	
	2000	4.30	330	14.19	4.20	320	13.44	
Northwest	Current	.15	170	.26				14.43
	1990	.12	250	.31	.12	250	.31	
	2000	.12	250	.31	.12	250	.31	
Middle & Lower Chang Jiang	Current	5.54	124	6.86				98.25
	1990	1.59	300	4.77	1.59	280	4.45	
	2000	1.69	350	5.92	1.79	330	5.91	
South China	Current	1.46	186	2.73				12.26
	1990	1.20	240	2.88	1.40	240	3.36	
	2000	1.00	300	3.00	1.05	280	2.94	
Southwest	Current	6.33	191	12.10				16.80
	1990	6.00	250	15.00	6.00	230	13.80	
	2000	5.50	300	16.50	5.50	280	15.40	

area will also be obviously on the decline. Right now the per-mu cotton yield in the Middle and Lower Chang Jiang Region is 1.17 times, 1.32 times, 1.36

times, and 1.17 times as much as in the North China, Northwest, Northeast, and Southwest Regions, respectively. By the end of this century these differences will drop to factors of 1.08, 0.93, 1.08, and 1.00, respectively, which means that inter-regional per-mu cotton yields will be essentially the same. Thus, we will have achieved relatively balanced production increases.

Second, to make the best use of regional advantages so as to achieve regionalized cash crop production, the quantity of products allocated and transported between regions will increase further. The Southwest, South China, and Northeast Regions respectively will need to transfer in 3.80 million, 4.84 million, and 4.40 million dan of cotton for domestic use. In general this is about 50 percent more than they bring in today, and most of it will be supplied by the North China and Middle and Lower Chang Jiang Regions. Cotton production is developing rapidly in the Northwest Region, and the area can now divert 3.00 million dan or more of cotton, including about .90 million dan of long-staple cotton. Because oil crop varieties are not [word omitted in source] in the various regions, except for the need to make varietal adjustments, each region can be basically self-sufficient or produce a slight surplus. In the Northeast Region some soybean oil can be transferred out. Because essentially no sugar is produced in the Middle and Lower Chang Jiang Region and the North China Region, and very little is produced in the Northwest Region, considerable inter-regional sugar allocation and transport is needed. The South China Region will soon be able to transfer out 0.40 to 0.90 million tons of cane sugar, the Northeast Region can transfer 2.30 to 2.80 million tons of beet sugar, and the Northwest region can transfer .70 to 1.00 million tons of beet sugar. Thus we can basically achieve self-sufficiency in sugar.

C. Steps We Must Take To Achieve Regional Development Goals

To achieve production development goals in each region and reduce inter-regional disparities as far as possible, we must adopt various effective measures to handle material inputs (see Table 25), technology, and economic policy. Only then can we ensure that regional advantages are put to the best use.

The Northeast Region: The Northeast is China's primary producer of grain, soybeans, and sugar beets. The area is rather highly mechanized, and by the year 2000 there will be 13.4 HP of farm machine power for each 100 mu of cultivated land. The region will use 118.2 jin of chemical fertilizer and 29.8 kwh of electricity per mu of cultivated land and increase the ratio of irrigated land from the current 12.7 percent to 31.2 percent. As for increasing commodity grain, the focus should be on increasing unit yields on existing cultivated land and making reasonable adjustments in the proportions of spring wheat, corn, soybeans, sorghum, and millet. On low-lying land that has abundant water resources we should create the conditions for paddy development and increase our proportion of fine grain. Low temperatures and cold damages affect a broad portion of the Northeast Region and do a considerable amount of harm. We should work to surmount this through technological reforms such as planting proper proportions of early, midseason, and late rice; sowing seed at the appropriate time; using plastic sheeting on seedling transplants; and popularizing soil-surface warming agents. At the same time, we should remain well in control during the harvest season to insure that all harvest factors are in correspondence with one another. Only then can we avoid cold injury and achieve our goal of stable growth in output.

Table 25. Development Forecast for Regional Material Inputs

Region	Date	Cultivated area & proportion of Chinese land Million mu	% of China	Total chemical fertilizer (million tons) Plan 1	Plan 2	Total effectively irrigated area (million mu) Plan 1	Plan 2
	1978-1982	254.697	17.1	4.793		32.263	
Northeast	1990	252.00	17.0	7.598	8.114	52.00	58.50
	2000	251.40	17.0	12.100	14.858	70.00	78.50
	1978-1982	444.655	29.9	17.693		217.317	
North	1990	442.230	29.9	22.801	24.30	241.35	244.60
China	2000	441.80	29.9	36.294	44.578	273.35	279.60
	1978-1982	194.133	13.1	1.587		73.744	
Northwest	1990	194.00	13.1	3.802	4.055	88.75	88.80
	2000	193.50	13.1	6.656	8.920	107.25	108.80
Middle &	1978-1982	313.314	21.1	19.328		211.632	
Lower	1990	311.70	21.1	25.00	28.50	216.70	217.70
Chang Jiang	2000	310.90	21.1	36.298	46.06	224.20	225.70
	1978-1982	106.620	7.2	7.007		65.065	
South	1990	106.00	7.2	9.879	10.123	70.10	70.20
China	2000	105.30	7.2	15.126	16.349	75.10	76.20
	1978-1982	173.145	11.7	6.649		68.176	
Southwest	1990	173.00	11.7	9.117	9.723	80.20	84.00
	2000	172.50	11.7	14.515	17.828	100.20	105.00
	1978-1982	1,486.561	100	57.057		668.197	
National	1990	1,479.00	100	78.221	80.162	749.10	763.80
total	2000	1,475.40	100	120.994	148.593	850.10	873.80

Region	Date	Total agricultural machine power (million HP) Plan 1	Plan 2	Total rural electricity consumption (billion kwh) Plan 1	Plan 2	Amount of chemical fertilizer per mu of cultivated land (jin) Plan 1	Plan 2
	1978-1982	22.034		4.99		37.6	
Northeast	1990	25.00	25.80	5.9	6.1	60.3	64.4
	2000	28.20	33.64	6.8	7.5	96.3	118.2
	1978-1982	70.98		11.63		79.6	
North	1990	84.00	86.00	13.4	14.3	103.1	109.9
China	2000	90.75	108.60	15.4	17.0	164.3	201.8
	1978-1982	14.927		2.03		16.4	
Northwest	1990	17.60	18.50	2.4	2.5	39.2	41.8
	2000	19.10	22.82	2.9	3.0	68.8	92.2
Middle &	1978-1982	55.927		10.48		123.4	
Lower	1990	66.00	67.60	13.0	13.5	160.4	182.9
Chang Jiang	2000	71.50	85.50	14.0	15.0	233.5	296.3

	1978-1982	17.595		2.75		131.4	
South	1990	21.00	21.60	3.2	3.4	186.4	191.0
China	2000	22.45	26.83	3.7	4.0	287.3	310.5
	1978-1982	14.834		2.39		76.8	
Southwest	1990	17.50	18.40	2.8	2.9	105.4	112.4
	2000	19.00	22.72	3.5	4.5	168.3	206.7
	1978-1982	1,962.907		34.27		76.8	
National	1990	231.00	237.90	40.7	42.7	105.8	114.1
total	2000	251.00	300.16	46.3	51.0	164.0	201.4

(Table 25 continued)

Region	Date	% of cultivated land effectively irrigated (%)		Farm machine power per 10,000 mu of cultivated land (HP)		Electricity consumed per mu of cultivated land (kwh)	
		Plan 1	Plan 2	Plan 1	Plan 2	Plan 1	Plan 2
	1978-1982	12.7		865		15.6	
Northeast	1990	20.6	23.3	992	1,024	23.4	25.5
	2000	27.8	31.2	1,119	1,338	27.0	29.8
	1978-1982	48.9		1,596		26.1	
North	1990	54.6	55.3	1,899	1,944	30.3	32.3
China	2000	61.9	63.3	2,054	2,458	34.8	38.4
	1978-1982	38.0		769		10.4	
Northwest	1990	45.7	45.8	907	954	12.3	18.9
	2000	55.4	56.2	987	1,179	15.0	15.5
Middle &	1978-1982	67.5		1,785		33.4	
Lower	1990	69.5	69.8	2,117	2,169	41.7	43.3
Chang Jiang	2000	72.1	72.6	2,300	2,752	45.0	48.2
	1978-1982	61.0		1,650		25.8	
South	1990	66.1	66.2	1,981	2,038	30.2	32.0
China	2000	71.3	72.4	2,132	2,548	35.1	38.0
	1978-1982	39.4		857		13.8	
Southwest	1990	46.4	48.6	1,012	1,064	16.2	16.7
	2000	58.1	60.9	1,101	1,317	20.3	26.1
	1978-1982	45.0		1,321		23.0	
National	1990	50.6	51.6	1,563	1,609	27.5	28.9
	2000	57.6	59.2	1,701	2,034	31.4	34.5

The North China Region: This is China's concentrated production zone for winter wheat and for cotton, peanuts, and other cash crops. From a long-term perspective, based on the best use of this region's advantages--its level and unbroken land, vast irrigated land area, high degree of mechanization, convenient communications and transportation, ample labor power, and good sunlight and heat conditions--we should integrate grain and cash crop production closely with diversified economic pursuits. We must actively adopt high-quality improved varieties, perfect irrigation and drainage facilities, improve low-yield soils, perfect fertilizer application techniques, and promote both high quality and high output. Just because cotton brings high economic results we absolutely cannot blindly pursue quantity and neglect to improve staple quality. We can raise the per-mu yield in this region to about

500 mu if we can accomplish the following tasks: resolve one or two key problems that affect production development, guarantee that 160 jin or more of chemical fertilizer is applied per mu, bring effectively irrigated area up to 63 percent, increase total farm machine power to 25 HP per 100 mu, focus on increasing mechanical components and equipment to fight natural disasters, and increase electrical consumption to 40 kwh per mu of cultivated land.

The Northwest Region: Because this region is situated in an arid and semi-arid zone, water resources are scarce, and water and soil erosion is severe, all measures must be directed toward achieving a beneficial ecological cycle. We must seek a breakthrough by cultivating grass and trees, raising windbreaks, binding sand, and forestalling water and soil erosion. We must arrange all measures to suit local conditions. At the same time, we must scientifically review drought resisting cultivation techniques in each locale, make the most of the rain that falls, and store the summer rain through the fall for use in the spring. We should employ measures to preserve soil moisture, inculding deep plowing, harrowing, smoothing, and rolling, and we should strive to see that 1 jin of grain is produced for each mm of precipitation. We should further coordinate these measures with suitable material inputs and ensure that the amount of chemical fertilizer we use is increased from the current 16.4 jin to 70 jin per mu. The area of effective irrigation should be raised 18 percent over the current level and total agricultural machine power should be improved 50 percent. Comprehensive application of these measures alone might raise the national unit grain yield from 204 jin to about 320 jin, bringing gross output up to nearly 50.0 billion jin and fixing per capita grain holdings at approximately 700 jin.

Southwest Region: In the Southwest Region the topography is complex, the climate is temperate, water resources are abundant, and there are conditions advantageous to both diversified economic enterprises and grain production development. Except for the Chengdu Plain most of the land is composed of mountains, hills, and small basins and it is known as the land of three-dimensional agriculture. Non-irrigated land comprises a rather large proportion (63.9 percent) of the existing cultivated land and irrigated land comprises rather little (36.1 percent). Through readjustments, the single-crop paddy area was expanded slightly and the multiple crop index may rise from the current 154.3 percent to 170 to 180 percent. In addition to increasing chemical fertilizers (applications should reach 170 jin or more per mu), farm machine power (to 13 HP or more per 100 mu), and other inputs, we must also make the best use of abundant water resources to develop small hydroelectric stations, methane gas, and other rural energy resources. Furthermore, we must develop on-the-spot agricultural and sidelines processing industries and envigorate the rural economy. In addition, several southwestern cash crops--oil crops, citrus fruit, tea, ramie, and flue-cured tobacco--are nationally very important. This is the traditional production zone for these cash crops and we should make major efforts to develop them, but because communications and transportation are inconvenient it is difficult to market them outside the province. In the future we must work conscientiously to carry out farmland capital construction centered around soil and water conservation. We must harness the rivers and improve the land, increase inputs, reform the cropping system, and improve the level of grain production. If we do so, it is completely possible that we will become more than self-sufficient in this region.

The Middle and Lower Chang Jiang Region: This region is China's concentrated production zone for double-crop rice, cotton, oil crops, fiber crops, silk, and tea. It has a warm, moist climate, plentiful water resources, ample labor power, a high degree of intensive farming, and an excellent agricultural production base. In the future, building upon a foundation of the best use of advantageous conditions for paddy production, we must readjust the cropping system; adopt improved varieties; practice intensive and meticulous farming; tap the potentials for increased yields in early, midseason, and single-crop late rice; improve rice quality, and raise the yield per unit of area. As for farmland irrigation techniques, we must enhance efforts to coordinate water conservancy construction projects as early as possible. Furthermore, we should concentrate on dredging rivers, lakes, and branching streams; we should lower the water table under the network of waterways on the plains paddy district; and, once and for all, we should correct damages from flooding, waterlogging, and standing floodwater on low-lying land. In addition, we must increase applications of pig manure, grass and pond sludge, green manure, stocked green duckweed, and other organic fertilizers. Then, building on this foundation, we should improve the compostion of chemical fertilizers, suitably control the quantity of nitrogenous fertilizer used, raise the proportions of phosphate and potash fertilizers, and approximately double the quantity of chemical fertilizer used per mu. Farm machine power should be increased 50 percent, and the stress should be on adding to irrigation and drainage machinery, fielding complementary machine units, and improving the capacity to resist natural disasters. Simultaneously, we should open ditches to drain the water from cold soggy fields, winter saturated fields, and muddy fields in hilly and mountainous areas, as well as from deepwater fields along the Chang Jiang and on lakeshores. We should then improve the soil, institute wet and dry crop rotation, and promote better use of the potential for balanced production increases.

South China: This region is situated in the southern subtropical and tropical zone. Most of the area experiences no annual frost, and all four seasons are suitable for agriculture. South China is China's primary producer of sugarcane and tropical and subtropical fruits, in addition to double-crop rice. The area is also suitable for growing rubber, coconuts, coffee, oil palms, and various other tropical crops. From an overall perspective, we must get better control of paddy production and ensure stable growth in gross grain output. In addition to exploiting the advantages of early rice, we should stress better management of late rice and improve unit yields, particularly on low- and moderate-yield paddy. Simultaneously, we should strive to develop tropical crops, especially rubber, replace low-yield saplings, and improve rubber output. We should make appropriate adjustments in sugarcane composition. In southwestern Guangdong and the southern portion of the Guangxi Zhuang Autonomous Region dry-field sugarcane cultivation is widespread. In these areas we should promote wet-field sugarcane cultivation and put wet and dry crop rotation into effect. We also need to improve the output per unit of area and increase the sugar yield from cane. As for material inputs, by the end of the century chemical fertilizer use should increase 160 percent in the South China Region, effectively irrigated area should rise 30 percent, farm machine power should grow 50 percent, and rural electricity consumption should expand 50 percent. Although the above material inputs are sufficient to realize projected production goals, because cultivated land is generally scarce and cash crops bring good results, for a long time to come the South China Region will not be self-sufficient in grain. Even if it attains its increased production goals it will still need to bring in approximately 3.4 billion jin of grain from outside provinces before it can meet regional demand.

V. Discussion of a Few Problems

A. Is 800 jin of Grain Per Capita Sufficient?

In 1983 China reached an average per capita grain production of 755.7 jin. This figure is still 85.3 jin lower than the 1981 world average, and cannot be considered abundant. Because we currently use less than one-fifth of our grain for fodder, there is a big disparity between fodder consumption in China and in the developed countries of the world (fodder grain accounts for 70 percent of gross grain output in France, 57 percent in Yugoslavia, and 43 percent in Japan). We are also far from meeting the supply of fodder necessary to improve dietary compostion (in Beijing, Tianjin, and Shanghai average per capita grain consumption measures 851 to 952 jin; the grain ration accounts for 31.7 to 34.5 percent of grain consumption, and fodder grain comprises 32 to 36 percent). The problems some regions are now having selling their grain have primarily been brought about because food marketing policies; circulation channels; storage, transport, and processing capacities; and grain conversion expenditures have been unable to adapt to new circumstances. Consequently, this has produced a relative overabundance of coarse food grains and, in parts of some regions, it has produced a comparative general overabundance. This is a temporary superficial phenomenon. Generally speaking, in the past two years Chinese grain production has increased by a large margin and reversed the long grain shortage we have experienced. This is a major accomplishment, but it only meets the low-level consumption demand. After we resolve subsistence, the grain requirement that remains is not just a "grain ration" problem. In order to improve dietary composition we must rapidly increase the proportion of fodder grain in grain consumption and the proportion of "fine grain" (rice and wheat) consumption in the grain ration. If we adopted corresponding policies and measures to expand grain conversion (the use of grain for fodder and processed foods) and readjust varietal composition and distribution, we would promptly find that we do not have enough grain.

From the perspective of general world trends, as agricultural production develops and the standard of living improves there is inevitably a switch from merely producing unprocessed food grains for subsistence needs to expanding processing and multipurpose grain utilization. For example, in developed nations 10 to 30 percent of the average per capita grain holdings are used for grain rations, whereas 70 to 90 percent are used for fodder and other purposes. As far as our domestic situation is concerned, in 1983 average per capita grain holdings measured 800 jin or more in 9 provinces: Liaoning, Jilin, Heilongjiang, Sichuan, Hubei, Jiangsu, Zhejiang, Hunan, and Jiangxi. According to the relevant statistical data, in several northern provinces the average per capita grain ration has generally reached 500 to 550 jin (here and below this refers to unprocessed food grain), and in several southern provinces it has generally reached 600 to 650 jin. These regions have in common a relatively high current level of ration-grain consumption, and we can say that they have already satisfied demand. However, consumption of animal products is still at a low level: in several northern provinces the average per capita consumption includes 26 jin of meat, 7.5 jin of fish, and 9 jin of eggs; in several southern provinces it includes 30 jin of meat, 5 jin of fish, and 5 jin of eggs. These figures convert to an equivalent of approximately 120 jin of fodder grain. This is still far from meeting our need to improve the standard of living and raise nutritional levels. Therefore, we must make a major effort to convert grain for fodder grain or other purposes, and only then can we promote further growth in grain production and meet the need to improve our standard of living.

As far as these provinces are concerned, we have a significant surplus after we satisfy our grain ration and other needs. For example, a typical survey of 44 rural households and 277 people in Liaoning, Jilin, and Heilongjiang shows that people generally have on hand 303 jin of grain per capita, and urban surplus grain and stockpiled grain coupons amount to 1.0 billion jin. A typical survey of 198 rural households and 1,066 people in Jiangsu, Sichuan, Zhejiang, and Jiangxi shows that surplus grain generally amounts to an average of about 150 jin per capita. This indicates that it is not only possible, but imperative, that we convert more grain in these provinces to fodder and other uses. From a national perspective, however, we have now only resolved basic subsistence problems. The quality of our diet is low and we consume a low level of animal products. Improving nutritional levels is still dependent on improving grain output. As for other agricultural products, the situation is similar: if we strive to develop multipurpose utilization, open up foreign trade markets, and expand conversion into various processed commodities, we will similarly find that production does not meet demand and there is no persisting problem of excess output. From the perspective of domestic and foreign development trends, by the end of this century the lower limit of average per capita grain holdings in China must be no less than 800 jin.

B. Has an Excess Appeared in Cotton Output?

In the past few years cotton production has grown rapidly. In 1983 gross cotton output totalled 92.74 million dan, and current average per capita cotton holdings measure 9 jin. Not only has every aspect of domestic demand been satisfied, but a large surplus has also arisen. We have already abolished the system we long followed of supplying cotton and cotton goods by voucher, and we have switched from cotton importing to cotton exporting. This is an extremely gratifying situation. However, as far as cotton spinning is concerned, in 1981 China procured 58.20 million dan of the 59.36 million dan of domestically produced cotton. Of this, 48.06 million dan was used in the textile industry, accounting for 82.2 percent of all cotton used for textiles (58.46 million dan). We also used 10.40 million dan of imported cotton, which thus made up 17.8 percent of all cotton for textile use. In 1982 cotton used in textiles totalled 70.00 million dan, of which 53.86 million dan, or 76.9 percent, was produced domestically, and 16.14 million dan, or 23.1 percent, was imported. The situation in the past 2 years indicates that we have to import about 20 percent of all the cotton we use. Furthermore, as far as exported cotton textiles are concerned, in the past few years China has annually exported cotton textiles equivalent to 4.00 million pieces of cotton yarn [as published], requiring 18.00 million dan of cotton. This accounts for a very small proportion of world import and export trade in cotton textiles. The cotton China produces today is low quality, and varieties are unsatisfactory to meet requirements. This affects the demand for textile cotton and is an obstacle to Chinese textile exports. In the future we must pay close attention to improving cotton quality, cultivate varieties that correspond to textile requirements, and enhance cotton performance and suitability for spinning. The next step is to improve the quality of textile products in order to help open domestic and foreign markets. Forecasting development on this basis, by the end of the century, if cotton output stabilizes at about 100 million dan per year, we can satisfy demand.

C. The Issue of Improving Agricultural Product Quality

In the wake of growth in the national economy and the implementation of policies opening China to the outside world and envigorating the domestic economy, domestic and foreign market demands on agricultural product quality are constantly increasing. We need to improve quality and produce superior products suited to market needs.

1. Grain: We must constantly increase the proportion of fine grains. In 1949 average per capita rice and wheat holdings amounted to 230 jin, from 1952 to 1978 they rose from 301 jin to 396 jin, and by 1982 they had increased further to 452 jin. In the 30-plus years from from 1949 to 1982 rice and wheat holdings rose an average 5 jin per year--not a slow rate of increase. However, today there are still a number of places where people do not have enough fine grain to eat. In view of this situation, and considering the requirements of growth in the food industry, we still need to work to expand rice and wheat production. We need to achieve a level at which all the people essentially eat fine grain, and we must increase the proportions of polished round-grained and long-grained nonglutinous rice. Simultaneously, we must improve quality in all other grain crops and raise the content of nutritional substances like protein and lysine. According to studies, Chinese paddy varieties now generally contain 8 to 10 percent protein and wheat varieties generally contain 10 to 14 percent protein. If we use quality breeding and other methods to raise the protein content of these grains 1 to 2 percent, in one year we can raise net protein 3.5 to 7.0 billion jin. By using mutated high-lysine corn material to improve the lysine content of hybrid corn we can also supply several billion jin of high quality concentrated feed to the livestock industry. Chinese soybean varieties generally contain 40 percent protein. If we increase this to 45 percent we can supply even more plant protein and improve nutritional levels.

2. Edible Cash Crops: China has achieved progress in improving rape quality: we have now bred a variety with an erucic acid content of less than 1 percent, and we are conducting further seed selection to breed a variety that lacks both erucic acid and thioglucoside. Breeding and disseminating these varieties will improve and increase the food value of rapeseed oil. There is great potential for increasing the oil content of sunflowers, and sunflower

oil is superior in quality. We can expand sunflower cultivation. The sugar content of our sugarcane and sugar beets is lower than international standards, so there is also a great margin for improvement. We must also popularize cultivation of improved teas that have already been bred in local areas and improve source varieties for black and green teas. We need to improve the quality of flue-cured tobacco and reduce imports of high-quality tobacco. We should stress regional breeding systems for improved varieties of fruit trees to improve the competitive strengths of the fruit products we export.

3. Fiber Crops: For cotton, within the next time period we must focus on breeding suitable varieties that have a staple length of 27 to 29 mm and strength measuring 4 grams. We should also concentrate on strong elasticity and either fiber fineness measuring a 5,600 to 6,200 metric yarn count or fiber coarseness measuring 1.6 or more. Simultaneously, we must arrange to produce some different types of cotton with staple lengths of 31-plus mm or 25 mm. This will help us to make reasonable and coordinated use of textile cotton. As for hemp and jute crops, we must raise the proportion of high-quality jute and focus on improving ramie fiber quality. We also need to raise the silk yield from silkworm cocoons from the 1980 level of 10.5 percent to 15 percent. Furthermore, we should strictly enforce examination techniques on silkworm cocoons to guarantee their quality.

In addition to improving varieties through breeding and improving cultivation management techniques, we must strictly enforce variety and seed standards, deploy essential simple and accurate quality testing measures, and establish commodity production bases and foreign marketing bases for all sorts of crops. We must adopt a policy of quality-based pricing and get top prices for top quality. By constantly raising crop and product quality we will improve the competitive strengths of our commodities.

D. Suitably Expand Multiple Cropping and Guarantee a Certain Sown Area

China has a large population and little land, and cultivated land is the foundation of the planting industry. Without cultivated land there can be no planting industry to speak of. The crucial matter at present is that if we are to rigorously control occupation of cultivated land for other uses and make rational use of cultivated land, we must handle land management as well as we handle the population problem. However, hereafter, as the national economy grows, capital construction of urban and rural industrial and traffic facilities must occupy a great deal of cultivated land. According to statistics, in the balance between cultivated land occupied for other uses and cultivated land opened through reclamation, by the end of the century China will lose 100 to 200 million mu of cultivated land. Thus, we must make up for insufficient sown area by increasing the multiple crop index. We must strongly emphasize that, for multiple cropping and other production expansion measures alike, there is one condition: we must suit measures to local conditions. Otherwise, if we expand blindly we may doom ouselves to reduced output or we may increase production without increasing harvests. However, we cannot use this as a basis to deny the benefits of increasing production. According to statistics, half of the current cultivated land area, two-thirds of the sown land area, and two-thirds of the gross grain output arise from multiple cropping, as well as over half of oil crop, cotton, and green manure production. From this the importance of multiple cropping in Chinese agricultural production is obvious. Most of China is situated in the temperate zone, but a considerable portion is located in the subtropical zone, where heat is ample and rainfall and heat arrive in the same season. As we improve production conditions and raise our technological level, and as we perfect and develop the output-related system of contracted household responsibility, we will open up even broader prospects for multiple cropping.

E. Revise Price Parities and Procurement Policies for Agricultural Products, Marshal Better Use of Economic Leverage To Promote Grain and Cash Crop Development.

Right now actual procurement prices for agricultural products (including the state assigned procurement base, increased prices for goods in excess of procurement quotas, material sales incentives, returned profits, and assorted non-price subsidies) are not based on value or production costs. This is totally irrational. Moreover, the pricing system is complicated and it is difficult to conduct a quantitative analysis of reasonable price parities between the various major farm and sidelines products. It is very difficult to resolve this problem. Right now there are large price differences within agricultural products, and this directly affects overall grain and cash crop development. According to a survey of Fushan Prefecture Guangdong, cultivating one mu of paddy producing 1,000 jin of rice per mu brings cash benefits of 110 yuan, and after deducting 40 yuan in costs the net income totals 70 yuan. Net income measures 216 yuan per mu when paddy land of equal fertility is used to grow peanuts, and it measures 190 yuan when used to grow sugarcane and 500 to 600 yuan when used to grow citrus. Surveys of Zhuzhou Hunan and Yexian Shandong show similar results: whether prices for agricultural products are equitable or not makes a big difference. Right now, the inequitable specific values of various agricultural products and the various factors obstructing circulation links have brought about overstocks of some goods and sellouts of other goods. This affects market supply, the standard of living, and peasant income, and it detracts from the development of commodity production. This problem has already progressed to the point that it absolutely must be resolved. First, procurement prices for all agricultural products must be based on production costs, or perhaps cash benefits from the various agricultural products should be roughly similar. Cash crops can be slightly higher than grain crops, but they should not be too much higher. Second, we can consider eliminating state price subsidies on state monopoly grain sales in the countryside. First we should abolish price subsidies on grain sold under incentive plans, and then we should eliminate grain-ration price subsidies. We can use the money saved by abolishing these price subsidies to raise the grain procurement price. Third, we should open everything further to public access and use purchase and sales contracts for agricultural products. All goods except those needed by the state should be left to the farmers to handle on their own.

VI. Major Conclusions

Based on a qualitative and quantitative study of 13 special topics and 28 crops, as well as on an agricultural regional location study using the province as the unit, we have made systematic predictions and conducted comprehensive research into social demand, production quantities, and the measures necessary to realize our goals. Our major conclusions are as follows:

1. By the end of this century our dietary composition will still be centered around plant foods, and the average annual per capita demand will require 380 to 475 jin of grain, 45 to 60 jin of meat, 20 to 24 jin of eggs, 40 to 60 jin of milk, 11 to 18 jin of fish, 12 to 13 jin of vegetable oil, and 12 to 13 jin of sugar. As for garment composition, cotton will continue to be our major raw material, but the proportions of wool, silk, and synthetic materials in clothing will rise rapidly and apparel will tend to be top quality. The average per capita demand will require 4.8 jin of cotton, 4.1 jin of synthetic material, 1.2 jin of silkworm cocoons, and 2 jin of wool. At that time the standard of living will be obviously improved, but it will only be about equivalent to the average world standard at the beginning of the 1980's. We can only say that people will be comparatively well off; that is, they will have attained the consumption level currently enjoyed in medium and large Chinese cities. This is suited to the end-of-the-century average per capita purchasing power (consumption fund) of 804 yuan, as well as to the 480 yuan of consumer power that will be used to buy food and clothing. Based on these essential demand targets, and figuring that the population at the end of the century will be held to 1.2 billion, we can extrapolate that total social demand will require 1.00 to 1.05 trillion jin of grain, average per capita grain holdings will measure about 850 jin, and the ratio of ration grain to fodder grain and other grain uses will gradually be adjusted from 7:2:1 in 1980 to 5:3:2 at the end of the century. In addition, total social demand for cotton will total 100.00 to 108.00 million dan, average per capita raw cotton will measure about 8.5 jin, and the ratio of cotton used directly in daily life to cotton for other uses and cotton for export will gradually be adjusted from 6.8:3:0.2 (not including the portion imported to support exports) to 6:2:2.

2. By the end of the century unit yields and gross output of the major agricultural products will rise to a new level. Based on an item by item analysis of 8 major grain products, including rice, wheat, corn, soybeans, potatoes, and so forth, we conclude that it is possible to raise per-mu yield an average of 10 jin per mu, for a 2.4 percent rate of increase. Given that sown grain area is maintained at either 1.64 billion mu or 1.7 billion mu, at an average per-mu yield of 577 to 618 jin, gross output can reach 985.9 to 1,053.7 billion jin. If cotton growing area is held to 80.00 to 85.00 million mu, at an average per-mu yield of 120 jin, gross output will reach 96.00 to 102.00 million dan. If the area sown in oil crops is expanded to 160 to 80 million mu, at an average per-mu yield of 250 jin, gross output will total 400 to 440 million dan. If unit crop yields reach levels currently produced in Zhejiang and Jiangsu, gross production can essentially satisfy social demand and some superior products can be introduced to the international marketplace or expand existing exports.

3. Total social demand extrapolated by using the consumption function, production calculated by using system simulation and regression models, and

results of a location study conducted on China divided into six regions essentially coincide with the above overall forecast study.

4. A study of grain and cash crop development in the past few years indicates that after subsistence problems are essentially resolved a demand for improved food quality will inevitably emerge. This means that we must convert surplus grain to develop animal foods and other processed foods. Consequently, the rate of grain conversion will become a limiting factor in developing grain production. Simultaneously, the major limiting factor on cash crop development is no longer the issue of grain production, rather it hinges on market demand and people's purchasing power and consumption level. In the future these will be essential features of cash crop production development.

5. In the wake of increasing grain production, by the end of the century we will need to convert about 300.0 billion jin of grain into meat, eggs, milk, and fish. In order to create a stable fodder base the planting industry must gradually change from its traditional production composition of grain, cash crops, and other crops to one composed of grain, fodder crops, and cash crops. Growing areas for these three categories of crops should be adjusted from the current ratio of 8:1:1 to 6:2:2.

6. Because each region has different advantages for development, interregional imbalances in the quantities and varieties of agricultural products will persist. By the end of the century the Northeast and North China Regions may be able to transfer out 13.0 to 18.0 billion jin of grain, and the Northeast Region will also be able to ship out 5.0 billion jin of soybeans. The Middle and Lower Chang Jiang Region will be able to transfer out approximately 4.0 billion jin of grain. However, the South China and Northwest Regions will need to ship in 3.4 billion and 2.4 billion jin of grain, respectively. As for cotton, the Southwest, South China, and Northeast Regions will still have to transfer in 3.80 million, 4.80 million, and 4.40 million dan, respectively, at the end of the century. This will have to be shipped in primarily from the North China and Middle and Lower Chang Jiang Region. The Northwest Region may be able to transfer out 3.00 million dan or more, including approximatly 900,000 dan of long-staple cotton.

7. In order to achieve projected production targets, by the end of the century we will need to increase chemical fertilizer inputs to over 120 million tons and adjust the ratio of nitrogen, phosphate, and potash fertilizer to 1:0.6:0.2. Irrigated area must be expanded to about 870 million mu, agricultural machinery must reach 17 to 20 HP per 100 mu of cultivated land, and rural electricity consumption must total 30 kWh per mu of cultivated land. Agricultural pesticides must total 210,000 tons, and the ratio of insecticides, germicides, and herbicides must be adjusted to 6:2:2. Plastic sheeting for agriculture must total 700,000 tons. We must energetically disseminate scientific research achievements and advanced experiences and improve material and energy utilization ratios. In addition, we must strive to improve and popularize comprehensive and coordinated sets of techniques suited to different regions so as to make the best use of their benefits in increasing yields.

According to calculations, by the end of the century the total investment in agricultural, forestry, animal husbandry, sidelines, and fishery production will be approximately 1,010.0 billion yuan, and the investment in rural industry will total 411.7 billion yuan. Together, the total investment will measure 1,421.7 billion yuan. In conformity with our policy to rely primarily on accumulations raised by rural areas themselves to settle agricultural production funds, given the funding ratio of 1.2:0.6:1.5:6.7 for rural industrial support of agriculture, state funds in support of agriculture, farm credit, and peasant-raised funds, we can supply a combined total of 1,470.0 yuan and basically meet the demand for production funds.

8. We must adopt policies beneficial to agricultural development. Working from the basis of a stable and perfected output-related system of contracted household responsibility, we must raise labor productivity and economic results by a large margin through readjusting rural industrial composition, suitably expanding the scale of planting industry operations, and gradually concentrating those operations in the hands of farming experts. We must depend on and apply the law of value as our primary means of regulating production and demand. Likewise, we should implement effective macroeconomic management methods and gurantee that there is mutual coordination between production of major agricultural products and social demand, production capacity and consumption levels, production capacity and circulation capacity, and consumption levels and purchasing power. In the wake of the growth of commodity production, market demand has become the major factor conditioning output of various agricultural products. Consequently, when there is an increase in the output of agricultural goods we must correspondingly improve quality, increase the variety and assortment, expand markets, and adopt relevant measures to improve people's purchasing power and actual consumption capacity. Furthermore, we must guide and encourage consumption and form a satisfactory cycle between production and consumption. This is the only way that we can help to further develop production.

VII. Appendix

The research on grain and cash crop development problems was conducted under the direction of the CPC Central Committee Secretariat Rural Policy Research Center and the Chinese Rural Development Research Center. The purpose was to provide referance material for readjusting planting industry composition and for formulating a long-term agricultural plan and a rural development program. In October 1982 the Chinese Academy of Agricultural Sciences accepted the responsibility for directing this research. Cooperating units included 12 central government minstries and commissions, including the Ministry of Agriculture, Animal Husbandry, and Fishery (Planning Department, Land Management Bureau, Agriculture Bureau, Animal Husbandry Bureau, Aquatic Products Bureau, Government Research Office), the Ministry of Commerce (Comprehensive Grain Bureau, Commercial and Economic Research Institute), the Ministry of Forestry (Reforestation Management Department, Chinese Academy of Forestry Sciences), Ministry of Light Industry (Research Office, Food Industry Bureau, Tobacco Corporation), the Ministry of Textile Industry (General Office, Planning Department, Goods and Materials Bureau, Synthetics Bureau, China Silk Corporation), the Ministry of Foreign Economic Relations and Trade (International Trade Research Institute), the Ministry of Water Resources and

Electric Power (Government Research Office), the Ministry of Chemical Industry (Planning Bureau), the State Planning Commission (Economic Research Institute), the China Agricultural Bank, the Chinese Academy of Sciences (Agricultural Research Commission), and the Chinese Academy of Social Sciences (Agricultural Economics Institute); as well as 5 institutions of higher learning and certain scientific research organizations, including the Chinese Academy of Medical Sciences (Institute of Health), China People's University (Agricultural Economics Department), Beijing Agricultural University (Agronomy Department, Agricultural Economics Department, Animal Husbandry Department), Beijing Agricultural Mechanization Academy, Beijing Economics Academy (Population Research Institute), the Ministry of Light Industry Cane Sugar Industry Research Institute, the Tropical Plant Research Institute of South China, and the Heilongjiang Academy of Agricultural Sciences Cash Crop Research Institute. In addition, the Chinese Academy of Agricultural Sciences released specialists to form the Grain and Cash Crop Development Study Group. The staff participating in the research included comrades Lu Liangnu [4151 5328 1829], Liu Zhideng [0491 1807 3397], Niu Ruofeng [3662 5387 1496], Huang Peimin [7806 0160 3046], Mei Fanquan [2734 2455 2938], Li Yuanzhu [2621 6678 6999], Huang Bufan [7806 0008 0416], Yan Yubai [0917 3768 4101], Zhang Yuerong [1728 2588 5554], Zhang Di [1728 ?], Liang Zhenhua [2733 2182 5478], Qin Yongnan [4440 3057 2809], Luo Haiping [5012 3189 1627], Xiao Jingyue [5135 4552 6460], Zou Fanwen [6760 5400 2429, Cheng Yannian [4453 1693 1628], Wang Guangzhi [3769 1639 2535], Meng Chi [1322 7459], and Zhu Zhongyu [2612 1813 3768]. In addition, 20 research institutes directly subordinate to this academy participated in the study.

After the symposium, in accordance with a resolution by the conference leading group, the Chinese Academy of Sciences Grain and Cash Crop Development Study Group, after adding a few revisions to the text of the discussion, advanced a "Comprehensive Report on Grain and Cash Crop Development in China" (Revised Text of the First Symposium), which it sent in October 1983 to all concerned units to solicit opinions.

In the spirit of the proposal made at the first symposium that this study "become more intense and expand its scope, first intensifying and then expanding," from September to October 1983 the Chinese Academy of Sciences Grain and Cash Crop Development Study Group conducted surveys in the Northeast Region, the Northwest Region, the Southwest Region, and the Middle and Lower Chang Jiang Region, respectively. From March to May 1984 the group held a special symposium on three topics: "Fodder Sources and Animal Foods," "Ligneous Foods and Oils," and "The State of Food Consumption in Provinces and Cities That Have an Average 800 Jin of Grain Per Capita." In addition they conducted specialized research on the state of produce and livestock consumption in 48 medium and large cities and on economic measures that must be taken to achieve projected production. Simultaneously, building from grain and cash crop research in every province, municipality, and autonomous region, and from elementary agricultural statistics on all Chinese provinces and counties, they conducted a grain and cash crop development location study of China after dividing it into six natural agricultural regions based on provincial units. Based on the various jobs discussed above, the group wrote its "Comprehensive Report on Grain and Cash Crop Development in China."

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BRIEFS

NEW ANIMAL BY-PRODUCT CENTERS--Beijing, 16 November (XINHUA)--China plans to add hundreds of animal by-products centers in the Seventh 5-Year Plan period (1986-1990) as a part of its efforts to improve the living standard of its huge population and to increase animal product export, according to a national agricultural meeting in session here. In 1990, there will be 150 lean-pork production centers, 10 water fowl centers and 200 sheep centers in addition to those for beef cattle, goats, rabbits, ducks and honey. Each of the 1 billion Chinese will have an average of 20.5 kilograms of meat, 7.8 kilograms of eggs and 5.6 kilograms of fresh milk by 1990, compared with 18.5 kilograms of meat, 5.1 kilograms of eggs, and 2.8 kilograms of fresh milk last year. Daily intake of energy from animal and poultry products will rise from 205 kilocalories to 321 kilocalories per person. Now, the country has 75 pig centers, 80 chicken farms and 115 million draft animals. This year's meat output is expected to reach 20 million tons, 5.2 percent more than in 1985. [Text] [Beijing XINHUA in English 0233 GMT 16 Nov 86 OW] /12232

FARMERS CULTIVATING MORE ACREAGE--Beijing, 18 November (XINHUA)--The Chinese Government is encouraging redistributing farmland to more capable farmers. "In the suburbs of large cities, regions where the economy is developed or areas which are overpopulated, farmers now cultivate more land compared with previous years," according to a speokeman for a national conference on agriculture. "Previously, each household only planted about 1 hectare," he told XINHUA, "but not, able families may cultivate several or a dozen hectares even in densely populated regions." Encouraged by the government, farmers are free to decide the form and scale their production will take, and they can also work cooperatively with other farmers, he said. "China began implementing a rural household responsibility system in 1979 and along with the development of rural enterprises and diversified businesses, more and more farmers have been shifting to other professions rather than working in the field," he said. As a result, farmers who have more funds and manpower are willing to contact more land, and agricultural experts believe this redistribution of land will help farmers bring in better economic results. [Text] [Beijing XINHUA in English 1117 GMT 18 Nov 86 OW] /12232

COMPUTERS MONITOR RURAL MARKETS--Beijing, 21 November (XINHUA)--China has begun using a computer system to monitor agricultural produce prices in domestic rural markets. The new system, the first of its kind used in China, has been put into operation after passing technical evaluation, and will help provide comprehensive rural marketing information to policy makers, producers and consumers. The group of scientists responsible for the system's evaluation believe it to have effective practical functions and to be helpful in policy making. The system involves three sub-systems, price monitoring, information processing, and comprehensive analysis. The monitoring system is able to watch prices of agricultural produce in 170 cities and towns throughout the country. The processing system will analyze monthly and quarterly marketing information, while the comprehensive analysis system will make annual or semi-annual analyses of rural markets in 28 provinces, municipalities and autonomous regions. [Text] [Beijing XINHUA in English 0256 GMT 21 Nov 86 OW] /12232

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CSO: 4020/47

BRIEFS

HONEY EXPORTS--In the first half of the year, Anhui exported 3,000 tons of honey to the U.S., Japan, and Europe, and earned $2 million U.S. in foreign exchange. [Excerpt] [Hefei ANHUI RIBAO in Chinese 20 Oct 86 p 2]

CSO: 4007/67

RENMIN RIBAO ON SOUTHERN FARMERS' SUCCESS

OW120518 Beijing XINHUA in English 0146 GMT 12 Nov 86

[Text] Beijing, 12 November (XINHUA)--Although some Chinese farmers now turn to rural enterprises for income, others in southern China are going back to the fields to seek prosperity, the PEOPLE'S DAILY reports.

An increasing number of farmers in Dongwan City, an economically-developed region in south China's Guangdong Province, are returning to producing vegetables and fruits which are currently in short-supply.

Since China began rural economic reform in 1979, a great number of rural factories and enterprises have been set up, which employ many able-bodies farmers.

According to the report, "Rural areas cannot become propserous without rural enterprises" is a popular slogan in the countryside, but, as a result, many farmers have squeezed into factories and some farmland is going to waste.

The south China farmers' success has drawn the interest and attention of Chinese economic experts, who in a PEOPLE'S DAILY commentary said, "Farming is an integral part of the rural economic structure, and in addition to rural industries, farming, commerce, fish breeding and fruit growing can also lead to prosperity."

In 1985, Dongwan City's total agricultural output value was 2.4 times the 1980 figure. The City's suburban areas have opened 6,000 hectares of farmland, built 16,000 family farms and grazing areas in cooperation with other regions and provinces. The average annual per capita income was 2,000 yuan (540 U.S. dollars) last year, while annual household incomes amounted to 10,000 yuan (2,700 U.S. dollars).

The paper added, "with the development of scientific technology and especially bio-engineering, rural productivity and economic results will see big breakthroughs."

The paper praised the party's policy of treating agriculture as a foundation of the society and its introduction of flexible government policies to suit the needs of agricultural development.

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BRIEFS

INCREASED LIVESTOCK--Beijing, 20 October (XINHUA)--Total livestock in southwest China's Guizhou Province reached 5.5 million head by 30 June, 4.73 percent more than at the same time in 1985. During the Sixth 5-Year plan period (1981-1985), Guizhou's livestock population increased an average of 5 percent a year. [Text] [Beijing XINHUA in English 0638 GMT 20 Oct 86 OW] /12232

CSO: 4020/47

BRIEFS

HUNAN ANIMAL HUSBANDRY DEVELOPS--Animal husbandry in Hunan Province has developed continuously this year. The amount of live pigs sold by the end of September was 18 million head, and the per capita pgis sold ranked first in the whole country. According to preliminary statistics, gross output of pork, beef, and mutton this year may reach 1.5 million tons and the output value 3.7 billion yuan, an increase of 260 million yuan over last year. The province has built 6,000 mixed feed plants whose annual capacity is 1.3 million tons. Fifty-nine counties have set up veterinary and animal husbandry technological service centers or joint county veterinary stations. With the joint county veterinary stations as the backbone elements, the province has trained 18,000 specialized households of various kinds serving animal husbandry. The whole province has formed an effective service network. The province has built 28 lean meat pig base counties, which sold 260,000 head of lean meat pigs in 9 months, some 300 percent more than in the same period last year. By the end of September, our province had sold some 1.7 million head of live pigs to Guangdong Province, 250,000 more than in the corresponding period last year. It is estimated that by the end of this year, the number of live pigs sold to Guangdong may reach 6 million by the end of September this year. [Summary] [Changsha Hunan Provincial Service in Mandarin 1100 GMT 8 Nov 86 HK] /12232

CSO: 4007/68

BRIEFS

RICE EXPORTS--Jiangsu Province has exported 10,000 tons of rice to Poland. [Summary] [Nanjing XINHUA RIBAO in Chinese 25 Oct 86 p 1]

CSO: 4007/67

PREVENTION, TREATMENT COUNTERMEASURES FOR SOIL EROSION

Xi'an SHUITU BAOCHI TONGBAO [BULLETIN OF SOIL AND WATER CONSERVANCY] in Chinese No 3, Jun 86 pp 16-21

[Article by Chen Jiazheng [7115 1367 2973], Jiangxi Agricultural University]

[Abstract] Jiangxi is composed predominantly of hills and mountains, with only 12,500 and 4,200 square kilometers of plain-terrace land and water surface--7.6 and 2.5 percent--respectively, of the total area of 166,600 square kilometers. The main cause of erosion is the heavy rains in May and June; this is approximately 40 percent of the intense annual precipitation of 1,400 to 2,000 millimeters. Soil and water erosion are the major culprits. The total soil-erosion area of the province was 3,625,000 hectares (in 1985)--21.7 percent of the total area. Erosion is spreading at an accelerating rate: from 1,067,000 and 1,800,000 hectares in the early Liberation period (early 1950s) and 1964, respectively. Loss of fertile soil, exhaustion of arable soil, silting up of riverbeds, diminished reservoir capacity, deteriorating environment, more frequent flooding and its related calamities (such as landslides), and shortages of timber and firewood are the products of erosion. The human factors of excessive timber cutting and reclamation of timberland for use as farms are mainly to blame. The author proposes comprehensive planning of mountains, water surface, farms, forests and roads with cognizance of the economic, social and ecological effects. He cites an individual peasant who invested only 230 yuan in 1984 to build a 6 cubic meter manure pool to generate methane, annually saving more than 3 tons of firewood and 20 yuan in the cost of electricity for lighting. After generating methane, the refuse was used to breed 100,000 earthworms, which were fed to 50 chickens and more than 10,000 fishes. The remaining liquid refuse was used as farm fertilizer as hog manure was dumped into the methane pool. Thus, the annual family income came to 12,000 yuan, an astounding amount among Chinese peasants. However, what is left unsaid by the author is the kind of market-oriented political policy that makes such rural prosperity feasible.

10424/9716
CSO: 4011/03

POOR GROWTH OF WHEAT, RAPESEED CROPS

HK140255 Xian Shaanxi Provincial Service in Mandarin 0030 GMT 14 Nov 86

[Excerpts] The growth of the proivnce's wheat and rapeseed crops is rather poor this year. It is essential to get a good grasp of winter field management.

Early this month, the provincial Agriculture and Animal Husbandry Department sent experts and technicians to more than 10 counties in Weinan and Baoji to investigate the growth of wheat and rapeseed on both irrigated and dry land. After making on-the-spot sample surveys, the experts held that the current main problems in the growth of these crops are: The sprouts are small and weak; flowering is slow; there are not many leaves; and the stalks are not sturdy. Many of the plants are third grade.

The main reasons for this are: The long period of drought and a serious lack of soil moisture in the wheat fields; lack of sufficient chemical fertilizer; and a reduction in the amount of base manure applied.

In view of the problems and the experts' proposals, the provincial authorities have called on all areas to get a good grasp of the following measures in winter field management: irrigation and manuring must be done at an early stage in the irrigated areas. In dry areas, the fields must be rolled so as to preserve soil moisture. Manuring should follow the rolling. Action must be taken to fight drought. For the rapeseed, the main things to be done are irrigation and manuring. For both crops, it is essential to do a good job in surveying and dealing with plant diseases and insect pests.

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SHANDONG

STATUS, PROBLEMS OF IRRIGATION WATER FROM YELLOW RIVER

Zhengzhou RENMIN HUANGHE [THE PEOPLE'S YELLOW RIVER] in Chinese No 2, 26 Apr 86 pp 42-44, 61

[Article by Chi Wenjiang [6688 2429 3068], Department of Agriculture and Water, Ministry of Water Conservation and Electric Power]

[Abstract] This is a report on 16 irrigation regions using water from the Yellow River; other than the author, the investigation was jointly conducted by Zou Guangrong [6760 1684 2837] of the author's department, Tong Erxun [0157 0059 8113] of the Yellow River Commission, and Wang Chunyi [3769 2504 5030], Jin Diantang [6855 3013 1016] and Bian Yushan [0593 3768 1472] of the Shandong Provincial Department of Water Conservation. The investigation covered six prefectures and municipalities: Dongying, Huimin, Dezhou, Liaocheng, Heze and Jining. First, the author presents an inventory of the irrigation facilities (using Yellow River water) built in Shandong Province since 1966, the year the project began: 40 culverts and lock gates, 75 syphons at 26 sites, a designed irrigation flow of 1,645 m^3/sec, 68 irrigation regions, and a designed irrigation area of 18,660,000 mu. The irrigation scheme benefits agriculture, as shown in the average yields of 883 jin of cereal grain and 141 jin of cotton per mu in five prefectures and municipalities along the Yellow River. To a certain extent, groundwater has been desalinized. The areas of saline soil were reduced to 4,750,000 mu from 9,660,000 in 1965, the year just before the irrigation project began. Silt covered barren land, transforming it into fertile farm. Following silt settlement, more than a billion cubic meters of water per year are supplied to inland waters, industries, inhabitants and the Shengli Oil Field. In northern Shandong, drainage of flood water was increased from 1140 m^3/sec in 1965 to 3,912 m^3/sec now, thus helping desalination and lowering the groundwater level for further expansion of the irrigation project.

However, the irrigation capacity considerably exceeds the river's supply during the low-water period; this problem can be relieved to some extent by properly utilizing the irrigation income in the form of water usage fees. As practiced in one irrigation region, water usage tickets and prepayment of water usage fees are employed to economize on water and thus serve a larger irrigation area. The fee income should be used in maintenance and depreciation of facilities, silt removal, administration, and major repairs. Silting of drainage channels remains a major problem, causing floods.

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GU JINCHI ON PRICES OF ARTICLES FOR DAILY USE

HK241053 Chengdu Sichuan Provincial Service in Mandarin 2300 GMT 22 Nov 86

[Text] According to a report in SICHUAN RIBAO, a phenomenon that the masses have vied with one another in rushing to purchase commodities, including white sugar, salt, vegetable oil, and grain, has appeared in places, including Chengdu, Nanchong, and Zigong, since the middle of this month. There has been a rumor that the prices of these commodities will rise very quickly. Everybody is talking about this.

In view of this, yesterday [22 November], a reporter went to interview Vice Governor Gu Jinchi and asked him to talk about the relevant problems.

Vice Governor Su Jinchi said: The rumor that the prices of white sugar, salt, vegetable oil, and grain will rise is groundless. I can definitely tell all people throughout our province that the country has made proper arrangements for the supply of these four kinds of commodities.

Question: Why have these several kinds of commodities been out of stock in some places?

Answer: So far as I know, this is simply the result of the normal supply and marketing channel being strained by the phenomenon of many people vying with one another in rushing to purchase them. We have an ample supply of these several kinds of commodities and can fully guarantee their supply. However, the demand has increased by several times and the transportation and processing links cannot cope with the situation for the time being. The departments concerned in places, including Chengdu, are now rushing to transport them to meet the needs of the market.

Question: Why has this practice of vying with one another in rushing to purchase them occurred among the masses? What is your view?

Answer: According to investigation and analysis, the worries of some people about the rise in commodity prices are reflected in a concentrated way in their consumption behavior. Some people are very sensitive to a rise in commodity prices and can hardly bear it in their mind. So long as there is a rumor in society that the prices of certain commodities will rise, people will be induced to vie with one another in rushing to purchase these commodities. This also shows that it is very necessary to strengthen publicity of and education in the consciousness of the commodity economy among the masses.

Question: Will the commodity prices greatly change now?

Answer: No, they will not. The general principle of our province's policy of the commodity prices is to maintain basic stability. This is also an objective requirement for the continuous development of the socialist economy.

Question: What consequences will be caused by people's blindly rushing to purchase commodities?

Vice Governor Gu Jinchi said: People's blindly rushing to purchase commodities does no good to our country or to individuals. In particular, it will cause people to feel uneasy, affect the stability and unity of society, and give an opportunity to a small number of lawless people so that consumers incur direct economic losses.

Question: What attitude will the provincial government adopt toward the practice of people vying with one another in rushing to purchase commodities?

Vice Governor Gu Jinchi said: The provincial government has shown great concern for this and decided that it would continuously do well in grasping two aspects of work this winter and next spring.

1. It will maintain the basic stability of the market commodity prices, particularly the stability of the prices of main commodities, including grain, oil, meat, and vegetables, and guarantee the market supply during the Spring Festival.

2. It would carry out a large-scale inspection of the commodity prices with the emphasis laid on the prices of consumer goods, means of production, and noncommodity charges. It would severely deal with the unlawful actions of taking the opportunity to indiscriminately raise prices and really guarantee the interests of the consumers.

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CSO: 4007/68

CHARACTERISTICS, RATIONAL UTILIZATION OF LAND RESOURCES

Dalian ZIRAN ZIYUAN [NATURAL RESOURCES] in Chinese No 2, Jun 86 pp 9-15, 36

[Article by He Shaoji [0149 4801 4614], Hangzhou University]

[Abstract] Zhejiang Province is a typical subtropical monsoon region with plains and waters occupying 22.68 and 1.36 percent of its area of 102,000 square kilometers. The remainder is composed of hills and mountains. Annual precipitation ranges from 1100 to 1900 millimeters, higher in the southwest inalnd and lower along the northeast seacoast. During the typhoon season, most damage is confined to the northeast coast while rains relieve drought conditions further inland. The major agricultural soils are humus soil and paddy soil, mostly along the banks of Hangzhou Bay and the southeast coast. Since the average cultivated land per capita is only 0.72 mu, the province is compelled to take advantage of its landforms of predominantly hills and mountains for the balanced utilization of forests, animal husbandry and cash crops instead of the conventional cereal grains in agriculture. Like elsewhere in China, excessive timber cutting is also a serious problem in the province; it is necessary to mark off some mountains for reforestation in order to create forest preserves. The state should draft a policy of supplying hill and mountain peasants with cereal grains so that they can cultivate tea, bamboo, fruit trees, and firewood and timber forests for balanced economic growth. Seven tables list varieties of landforms, average land per capita, composition of agricultural income, forest area and timber reserves, distribution of cultivated land, as well as hill and mountain areas.

10424/9716
CSO: 4011/06

BRIEFS

POLLEN PRODUCTS EXPORT CENTER--Hangzhou, 24 November (XINHUA)--China will build its largest export center of nutrient pollen products in this capital of Zhejiang Province, a local official said today. The State Science and Technology Commission will invest 1.5 million yuan (400,000 U.S. dollars) in the construction. A research institute on the application of locally abundant sesame and rapeseed pollens has already been established. The first product--an orally administered liquid has been developed jointly by a local company and a research institute of the Zhejiang medical society. With a complete range of nutrient elements, the product is said to be able to enhance strength, improve the functions of the heart and memory, and increase protein in the blood serum. [Text] [Beijing XINHUA in English 0703 GMT 24 Nov 86 OW] /12232

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